

IMPLICATIONS FOR A HOUSING POLICY IN TAIWAN
BASED ON THE SINGAPORE EXPERIENCE

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To

My dearest wife and in memory of
my dearest parents and father-in-law

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INTRODUCTION

A. PROBLEMS AND THE PURPOSES OF THE REPORT

There are several factors which directly or indirectly influence the housing problem in Taiwan, due to the dilemma between economic and social realities. They are:

Direct Factors

1. lands are limited
2. land prices are very high
3. population growth is rapid
4. economic development is rapid
5. housing demands are strong and housing costs are high

Indirect Factors

1. low and middle income people are unable to buy a house and are forced to live in slums and blighted areas because of high housing costs
2. many poor people have occupied public and private lands and have built illegal, simple structured houses

Taiwan is an island in the western Pacific with an area of 35,981 square kilometers. Mountains in the central and eastern regions occupy 22,835 square kilometers, accounting for three-fifths of the total area.

Plain and hilly lands are mainly distributed in the western part of the country, accounting for about two-fifths of the land area. It is in these areas that economic activities and related development are concentrated.

In 1949, after the Communist Party took over Mainland China, the government of the Republic of China moved to Taiwan. At that time, the population was 7,396,931. By the end of 1978, the population had risen to a total of 17,135,714. Within 29 years, the population increased by almost ten million. With a population density as high as 476 persons per square kilometer, Taiwan has one of the world's highest population densities, yet the population growth is still rapid.

After the implementation of the land reform project, which was carried out in 1949, the social and economic structure changed greatly. The landlords were no longer the rich men -- business men took their place and became the middle-high income class. Meanwhile, due to the success of the government's economic projects, the people's income increased and enhanced their abilities to purchase goods and services. Especially in 1973, due to the huge expansion of international trade, many people became rich and invested their extra money into real estate. This encouraged construction companies to build various mansions, villas and apartments to meet their needs. Because the value of real estate is always going up, it has become the target of speculation. The rich people have purchased housing for more than their needs. Under this situation, housing prices are always very high and cannot be accepted by the low-middle income people, forcing them into slums or blighted areas, or to rent a very small unit house. To complicate the situation, many poor people have occupied public and private lands and have built illegal, poorly structured shelters called squatter houses. Because of their large numbers, they have become an obstacle to urban development. Inevitably, they destroy the beauty of the city. Naturally, it appears that the government must help ease the housing problems by building inexpensive mass housing and selling or renting it to low and middle income families.

This is what is called public housing in Taiwan.

It has been estimated that about 150,000 public housing units are needed per year. So far, no more than a total of 100,000 units have been built per year.

The shortage of public housing is considered very critical. According to the newly issued ambitious plans for twelve big economic development projects, public housing has been accorded the rank of first priority. The government now realizes the seriousness of the problem and is committed to trying to find a solution.

In this report, the public housing programs of Taiwan will be reviewed and compared with those of Singapore because Singapore has gone through similar problems as Taiwan, such as high population density, heavy housing needs, etc. Recommendations will be thereby developed for improving the public housing program in Taiwan.

B. SCOPE AND METHODOLOGY

1. This report will discuss the reasons why housing problems are so serious in Taiwan. It will concentrate on public housing projects. An attempt will be made to identify the ways to carry out a sound project.
2. Discuss existing housing problems in Taiwan
3. Present and evaluate current housing policies in Taiwan
4. Present and evaluate current housing policies in Singapore
5. Make recommendations for Taiwan's long range and middle range public housing projects

C. MAJOR SOURCES OF DATA

Public housing is a kind of social security and therefore is the responsibility of the government. Therefore, the major data sources will be governmental publications which cover the following fields:

1. Population growth
2. Urbanization pattern
3. Economic development
4. Industrialization
5. Land law
6. Land policy
7. Land reform
8. Urban and housing development
9. Public housing projects
10. Singapore's public housing projects

The governmental publications were published by the following departments:

1. Executive Yuan of the Republic of China
2. Housing and Urban Development Department, Council for Economic Planning and Development
3. Taiwan Provincial Government, etc.

Beside the governmental publications, the data will include:
University presses, private lectures, newspapers, specialized books, etc.

Chapter 1

BACKGROUND INFORMATION

A. NATURAL ENVIRONMENT OF TAIWAN

Taiwan, sitting astride the Tropic of Cancer at the western edge of the Pacific Ocean, was called Ilha Formosa (beautiful island) by entranced Portuguese explorers who first sailed its costal waters in the sixteenth century. Asians and westerners alike have never ceased to marvel at the lush greenness of the lowlands set against a majestic backdrop of soaring mountains.

Separated from Fukien Province on the Chinese Mainland by a 100-mile-wide strait, Taiwan is about the same distance from Hong Kong to the southwest and Shanghai to the northwest. Four hundred miles north-east the Ryukyu Islands, of which Okinawa is the largest, lead to the Japanese archipelago, while Luzon, of the Philippines lies 225 miles to the south.

Tobacco-leaf-shaped Taiwan is 240 miles long, north-south, and 88 miles at its greatest width. Its area of 35,981 square kilometers (13,885 sq. mi.) is about equal to Massachusetts, Connecticut and Rhode Island combined. More than two thirds of the island consists of rugged foothills and mountain ranges with some peaks rearing 12,000 feet or more above sea level. Arable flat lands characterize the western coast. Steep, high cliffs plunging directly into the Pacific make up the east coast.^(6:1) The areas of major land forms are as indicated in Table 1-1.

Local climates are conditioned by strong north-east winds in winter and milder south-west winds in summer. This results in hot,

Table 1-1

Area of Major Land Forms in Taiwan

Land Forms	Square Kilometers	Square Miles	Percentage
Total	35,981	13,892	100.00
Mountains	22,835	8,817	63.5
Basalt and Mesa	108	42	0.3
Foothills	2,265	875	6.3
Terrace Tablelands	1,798	694	5.0
Alluvial Plains	8,759	3,381	24.3
Sand Hills and Dunes	216	83	0.6

Source: China Publishing Company, China Yearbook, 1979. Taipei, 1980
p. 140.

humid summers and short, cool winters broken by spells of pleasantly warm weather. Winds, high mountains and surrounding seas combine to give heavy rainfall, especially on windward slopes. Average annual rainfall ranges from 50 inches on the low western coast to more than 250 inches in some northern areas. An average of three destructive typhoons hit the island each year usually between June and October. Mild earth tremors occur frequently although destructive earthquakes are relatively rare.

Warm currents give Taiwan a climate that makes vegetation abundant and permits two to three rice harvests a year.

Mean monthly temperature rises to 20^oc in April, and remains high until November. June to September brings the hottest weather, with mean monthly temperature ranging from 25^oc to 28^oc. (3:143) The temperature is very comfortable.

B. POPULATION AND DENSITY

At the end of 1978, Taiwan had a population of 17,136,000 including Taiwan Province and Taipei City. Of this total 8,957,000 were male and 8,173,000 were female. Taiwan Province reached a new high of 14,872,395 persons; Taipei City had 2,163,605 persons. (3:143) The population density is one of the highest in the world. As of the end of 1978 it was 467 persons per square kilometer. The average density of population per square kilometer on cultivated land of the western coastal plain exceeds 1,500. (3:144)

C. HISTORICAL SUMMARY

From fragmentary records early official Chinese Mainland contact with Taiwan appears to have been accidental and sporadic. In 605 A.D. a Chinese navigator unsuccessfully tried to persuade the aboriginal

island inhabitants to acknowledge as their sovereign state the then-ruling Sui Dynasty. Records mention that an admiral of the Tartar Yuan Dynasty accidentally reached Taiwan 700 years later. In the fifteenth and sixteenth centuries several high officials of the Ming Dynasty touched briefly on the shores of the island which had become a center of trade as well as a haven for Chinese and Japanese pirates.

Attempts at colonizing Taiwan were made by the Japanese, Spanish and Dutch in the sixteenth and seventeenth centuries. The Dutch maintained a profitable trading station at Anping near Taiwan, in southwestern Taiwan for forty years. The fall of the Ming Dynasty to non-Chinese Manchus and the subsequent flight of Ming loyalists resulted in large-scale Chinese settlement of the island and from 1662, undisputed political control by the Chinese under the colorful Taiwan hero and Ming patriot, Kozinya (Cheng Cheng-Kung). In 1682 the Manchus succeeded in bringing the island under their control and Taiwan became part of the Mainland Province of Fukien. Separate provincial status was granted in 1885.

By terms of the Treaty of Shimonoseki at the conclusion of the Sino-Japanese War (1894-1895) China ceded Taiwan to Japan. The island thus became Japan's first colonial possession and during the subsequent fifty years underwent intensive development as a vital producer of food and raw materials for the nation to the north. In 1945 the Chinese government received the surrender of the Japanese on Taiwan and occupied the island. After withdrawal of the Nationalist government from the Mainland, Taipei became the temporary seat of government of Free China on December 8, 1949. (6:2)

D. PRELIMINARY ANALYSIS OF THE CORRELATES OF HOUSING PROBLEMS
IN TAIWAN

income families in Taiwan is that housing built by private construction companies is too expensive. There are several factors accounting for the high costs.

1. The natural environment factors:

Taiwan is an island, surrounded by the ocean, therefore the land area cannot be increased. Mountains account for three-fifths of the total area, plains and hilly land account for two-fifths, a large portion of which should be protected for agricultural use. Good farm lands are not allowed to be used for construction under regulations enforced by the Taiwan Provincial Land Bureau. The plains must have a city plan and only the zoning regulations specify the land available for construction. In addition, since Taiwan is located in an earthquake zone, buildings have a height limitation of 45 meters (or approximately 147.64 feet). In only a few cases, subject to approval by the city mayor, can buildings be higher than 45 meters. Because of these limitations land became very limited. As already pointed out, housing prices cannot be inexpensive.

2. Demographic factors:

Land and population are two basic components impacting on housing. The population problem in the Taiwan province is a high growth rate from immigration and births. Table 1-2 indicates that the population in 1946 was six million and in 1956, more than nine million. In 1966, it was more than twelve million or twice that of 1946. In 1976, it increased to more than sixteen million. Thus within 30 years, the population increased 10 million, almost three times the population of 1946. The population density increased from 169 persons per square kilo-

Table 1-2

Total Population, Annual Increase, and Numbers and Rates
of Natural Increase, Births, and Deaths for Taiwan Area,
1946-1976

Year	Year-end Population	TOTAL POPULATION			NATURAL INCREASE			BIRTH			DEATH			Density Person / Kilometer
		Annual Increase Rate %	Increase Index	Number	Rate %	Number	Rate %	Number	Rate %	Number	Rate %	Number	Rate %	
1946	6,090,860		100.00	---	--	---	--	---	--	---	--	---	--	169
1947	6,495,099	66.37	106.64	126,879	20.16	241,071	38.31	114,192	18.15					180
1948	6,806,136	47.89	111.74	168,463	25.33	263,803	39.67	95,340	14.34					189
1949	7,396,931	86.80	121.44	207,494	29.22	300,843	42.36	93,349	13.14					205
1950	7,554,399	21.29	124.03	237,906	31.82	323,643	43.29	85,737	11.47					209
1951	7,869,247	41.68	129.20	296,124	38.40	385,383	49.97	89,259	11.57					218
1952	8,128,374	32.93	133.45	293,871	36.74	372,905	46.62	79,034	9.88					225
1953	8,438,016	38.09	138.54	296,458	35.79	374,536	45.22	78,078	9.43					234
1954	8,749,151	36.87	143.64	313,393	36.47	383,574	44.63	70,181	8.17					243
1955	9,077,643	37.55	149.04	327,098	36.70	403,683	45.29	76,585	8.59					252
1956	9,390,381	34.45	154.17	339,961	36.82	414,036	44.84	74,075	8.02					260
1957	9,690,250	31.93	159.09	314,156	32.93	394,870	41.39	80,714	8.46					269

Table 1-2 (Continued)

Year	Year-end Population	TOTAL POPULATION			NATURAL INCREASE			BIRTH			DEATH			Density Person / Kilometer
		Annual Increase Rate %	Increase Index	Number	Rate %	Number	Rate %	Number	Rate %	Number	Rate %	Number	Rate %	
1958	10,039,435	36.03	164.83	336,143	34.07	410,885	41.65	74,742	7.58	279				
1959	10,431,341	39.04	171.26	347,406	33.94	421,458	41.18	74,052	7.23	289				
1960	10,792,202	34.59	177.19	345,727	32.58	419,442	39.53	73,715	6.95	299				
1961	11,149,139	33.07	183.05	346,431	31.58	420,254	38.31	73,823	6.73	309				
1962	11,511,728	32.52	189.00	350,548	30.94	423,469	37.37	72,921	6.44	319				
1963	11,883,523	32.30	195.10	352,516	30.14	424,250	36.27	71,734	6.13	330				
1964	12,256,682	31.40	201.23	347,665	28.80	416,926	34.54	69,261	5.74	340				
1965	12,628,348	30.32	207.33	338,718	27.22	406,604	32.68	67,886	5.46	350				
1966	12,992,763	28.86	213.32	345,328	26.96	415,108	32.40	69,780	5.45	361				
1967	13,296,571	23.38	218.30	302,421	22.63	374,282	28.01	71,861	5.38	369				
1968	13,650,370	26.60	224.11	320,610	23.43	394,260	28.81	73,650	5.38	379				
1969	14,334,862	50.14	235.35	320,179	22.72	390,728	27.72	70,549	5.00	398				
1970	14,675,964	23.80	240.95	322,880	22.26	394,015	27.16	71,135	4.90	407				

Table 1-2 (Continued)

Year	Year-end Population	TOTAL POPULATION			NATURAL INCREASE			BIRTH			DEATH			Density Person / Kilometer
		Annual Increase Rate %	Increase Index	Number	Rate %	Number	Rate %	Number	Rate %	Number	Rate %	Number	Rate %	
1971	14,994,823	21.72	246.10	309,470	20.86	380,424	25.64	70,954	4.78	416				
1972	15,289,048	19.62	251.02	294,263	19.43	365,749	24.15	71,486	4.72	424				
1973	15,564,830	18.04	255.54	293,466	19.02	366,942	23.78	73,476	4.76	432				
1974	15,852,224	18.46	260.26	293,063	18.66	367,823	23.42	74,760	4.76	440				
1975	16,149,702	18.76	265.15	292,586	18.28	367,647	22.98	75,061	4.69	448				
1976	16,508,190	22.20	271.03	346,760	21.24	423,356	25.93	76,596	4.59	458				

Source: In the table, the data for the years of 1946-65 are obtained from the reports of household registration statistics submitted by Civil Affairs Department of Taiwan Provincial Government, the data for 1966-68 are obtained from the reports of household registration statistics submitted by Civil Affairs Department of Taiwan Provincial Government and Civil Affairs Bureau of Taipei Municipal Government and the data for 1969-76 are obtained from the reports of household registration statistics submitted from Police Department of Taiwan Provincial Government and Police Bureau of Taipei Municipal Government.

meter in 1946 to 458 persons per square kilometer in 1976.

At the same time, the population immigrated from the rural to urban areas. From 1951 to 1972 the population of Taiwan's five largest cities (Taipei, Taichang, Keeling, Tainan, and Kaohsiung) expanded from 1.5 to 4.1 million. In 1951, these five cities contained 18 percent of Taiwan's population, and in 1972, they contained 27 percent. Not only did the largest municipalities grow, but so did the smaller cities and towns. The census counted 40 communities with populations over 30,000 in 1940, and 179 in 1966. One of the many factors that contributed to Taiwan's urbanization was the great influx of mainland refugees in the late 1940s. Since most of the mainlanders were originally urban dwellers, a large proportion of them resettled in cities where work and life-styles were familiar. As a consequence, urban growth was most rapid in the late 1940s and early 1950s. However, thereafter urbanization was primarily the result of a high rate of natural increase in the cities and migration from rural areas. (5:139) As a result the housing problem became more serious. On the other hand due to a change in social structure, the number of members of each family has decreased. The average was 5.6 persons in 1970, and only 5.28 in 1975. Meanwhile, the tradition of several generations living in the same house has declined, and therefore the number of households has increased, from 2,638,190 in 1970 to 3,079,292 in 1975. Within 5 years, the number of households increased by 441,102 or 16.72%. (7:68) All of these factors affect the housing demand.

3. Social value factors:

a). Land characteristics: Land is a factor of production,

forms of capital. The attributes or special characteristics can be classified as physical and economic. Physical characteristics are immobility, indestructability and nonhomogeneity. Economic characteristics are scarcity, modification (improvements), fixity of investment, location.^(1:7) Because land has these characteristics, land and housing are to be considered as the best target of speculation.

b). Due to rapid population growth and the limitation of land, real estate prices in Taiwan are always going up. Real estate harbors few risks, therefore it is a good target of investment, especially during periods of economic panic. Most idle money goes into real estate in order to prevent depreciation.

c). The Chinese have a saying, "To have land means to have assets: to have assets means to have something usable." This is a typical Chinese concept concerning land. Everyone desires to possess his own piece of land. Additionally, it is a symbol of social status.

4. Economic factors:

a). Land reform: The success of land reform was the foundation of Taiwan's economic growth. This program was initiated in 1949. At that time, 52 percent of the total population was engaged in farming. Of all the cultivated land 56.3 percent was under tenancy. Of the total farm population, 39 percent were tenants, 25 percent part-owners and only 36 percent were owner-cultivators.^(3:176) Under the traditional tenancy system, the tenant had to pay rent

of over 50 percent of the total crop yield. In extreme cases, the rental rate was as high as 70 percent. In order to correct this unhealthy situation, the government decided to carry out a series of reforms, including rent reduction, sale of public lands and a land-to-the-tiller program.

(1) Rent reduction: Before land reform, the tenant had to pay rent of over 50 percent of the total crop yield. After land reform, the farm rental rate had to be reduced to 37.5 percent of the annual main crop yield. If the rent originally agreed upon exceeded that limit, it had to be reduced accordingly. If the original rate was less than 37.5 percent, it could not be increased. The rent reduction gave tenants a wider financial margin and enabled them to buy their own land and plan for the future.

(2) Sale of public farm lands: After the recovery of Taiwan, the government took over about 181,000 hectares of farm lands from the Japanese government, of which 100,000 hectares were tilled by tenant farmers. In 1951, the government began to sell public lands to incumbent tenants. The sale price was fixed at 2.5 times annual main crop yield, to be amortized by tenant purchasers in 20 installments, spread over 10 years. From 1951 to 1964, 110,000 hectares of public farm lands were transferred to the private ownership of 210,000 tenant families.

(3) Implementation of the land-to-the tiller program: It's an assumption that only when the farmers have their own land, will they do their best to cultivate it. Under this assumption, the government carried out the land-to-the-tiller program in 1953. This was the most important stage of the land reform. Privately tenanted holdings in excess of three hectares of medium grade paddy field or equivalent were compulsorily purchased by the government and resold to incumbant tenants. Both purchase and resale prices were fixed at 2.5 times the annual main crop yield. The government paid a lump sum to landlords, 70 percent in commodity bonds and 30 percent in the stocks of four government enterprises. It was this method that let the farmers have their own land, and transferred the landlord's capital from land to industries.

In 1953, the government purchased 140,000 hectares or 55 percent of all privately tenanted land, and resold it to 195,000 farm families making up 64 percent of the tenant population on private land. Farm ownership in Taiwan accordingly increased from 61 to 86 percent and farm tenancy was reduced from 39 to 14 percent. As a result, this reform has promoted economic progress and social stability greatly in Taiwan.

b). Industry development: Taiwan is an island with very limited natural resources. However, its industrial development potential is not totally limited. Since 1945, its industrial emphasis has been placed on rehabilitation and recon-

struction of the war-damaged industries, mainly power, fertilizer and textiles. These are light, labor-intensive industries and the products are mainly for local consumption.

Since 1971, the industries promoted have been capital and technology-intensive, such as heavy and chemical industries, precision and high grade industries. From then on, the products were mainly for export. The rapid industrial development can be measured by the average annual growth rate of industrial production. In 1965, the rate reached was 17.8 percent, as high as 21.3 percent in 1970, more than 20 percent in 1972 and 1973, 21.9 percent in 1976, and 25.0 percent in 1978.^(3:183) The rapid industrial expansion has played an important role in the supply of employment opportunities and increased the national income, i.e., the national purchasing ability has increased. On the other hand, due to rapid industrialization, numerous laborers are attracted from the rural areas and concentrated in urban areas, causing many additional housing problems.

c). Foreign trade: The growth in Taiwan's trade since World War II has been phenomenal. In 1952, three years after the civil war on the mainland had ended, inflation was subsiding and United States aid had gotten under way. Taking that year (1952) as a base, the average rate of growth in the volume of exports was 17 percent per annum and 13 percent annum for imports, until they were checked by the oil crisis of 1973. Few other countries can equal that record of sustained growth. This growth has made Taiwan one of the largest markets in Asia for the exports

from other countries. In 1974 only Japan's and Singapore's imports were larger, although Hong Kong's and South Korea's (both formidable competitors) were nearly as large. Taiwan's population was only sixteen million, but its imports were then 40 percent greater than India's (596 million population), 80 percent greater than Indonesia's (128 million population) and 300 percent greater than Pakistan's (68 million population). (4.308)

With the gradual recovery of the world economy, since 1976, Taiwan registered a sustained and rapid growth in foreign trade. In early 1978, global prosperity loomed over the horizon as all available information indicated that oil prices would remain unchanged for the year. In the developed countries, the demand for consumer goods went up quickly. In addition, the value of the U.S. dollar against the strong currencies plummeted. All these facts contributed toward a boom in export trade for this country.

By the end of the first half of 1978, rapid accrual of foreign exchange earnings exerted a strong inflationary pressure on the local economy. On July 11, 1978, the government decided to revalue the New Taiwan Dollar (NT\$) from 38 to 36 per U.S. \$. The new exchange rate gave the currency an appreciation of 5.26 percent. Although this measure increased the cost of production, the rate of revaluation was mild enough for export trade to retain a high growth rate in the second half of 1978.

According to customs statistics, the two-way trade volume of 1978 was registered at U.S. \$ 23,714 million, up

U.S. \$ 5,842 million, or 33 percent over 1977. Exports totaled U.S. \$ 12,687 million, up 35.5 percent; imports U.S. \$ 11.027 million, up 29.6 percent. The net trade surplus thus was U.S. \$ 1,660 million. The increment of foreign currency reserves will enable this country to support an expanded import program of capital equipment and commodities to promote accelerated industrial development and economic growth. (3:194)

5. Political Factors:

Taiwan is a politically sensitive area, because it is threatened by the communists, and vice versa. In the past 30 years, due to its political stability this country has overcome many obstacles and problems. This is the basic reason for its high rate of the economic growth, and industrial development. However, political crises always affect the housing exchange. It is a temporary phenomena. For example, in 1973, when the country retreated from the U.N., the housing market was quiet, but after a half year, the market was active again.

E. THE HOUSING PROBLEM AND THE NEED FOR PUBLIC HOUSING

Owing to the interrelated factors as mentioned above, the national income has increased greatly. There are many people who have become rich, and like to invest their money in real estate; thus, encouraging private construction companies to build various types of housing to meet the investors' need. Many people buy more than they really need. According to a survey sponsored by the Ministry of Finance, there are more than 5,400 families with more than 2 houses, more than 500 families with more than 10 houses in the Taipei area. (2:2) On the other hand, due to the government's decontrol, the private construction companies construct with-

out foresight on actual housing demands. According to the same survey, there are 454,400 dwelling units in the Taiwan area that are now empty. These houses are not built for low or middle-income families, therefore, the prices are very high. According to the recent quotation of the housing market, the housing prices are NT\$ 91,000 (U.S. \$ 2,527) to NT\$ 170,000 (U.S. \$ 4,722) per ping (1 ping = $3.3 \text{ m}^2 = 35.51 \text{ ft.}^2$) in Taipei city, and in the suburbs they are NT\$ 53,700 (U.S. \$ 1,492) to NT\$ 88,400 (U.S. \$ 2,456) per ping. In Kaohsiung city the prices are a little lower, from NT\$ 28,200 (U.S. \$ 783) to NT\$ 99,300 (U.S. \$ 2,758) per ping. (8:98) The average salary of low or middle-income families is NT\$ 10,000 to NT\$ 15,000 per month. These housing prices are too high to be acceptable to the low and middle income families. Therefore, realistically there are two ways to solve their housing problems: rent a house or occupy private or public land and build an illegal house -- the reason for squatter house formation. In order to help these low or middle-income families to relieve their housing problems, a sound, effective public housing program is needed.

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Chapter 2

REVIEW OF THE PUBLIC HOUSING PROGRAMS

A. A BRIEF HISTORY OF PUBLIC HOUSING PROGRAMS

The result of the population increase and relocation has been a shortage of housing, congestion, increased squatter dwellings in urban areas, and consequently a slowdown on the improvement of standards of living and social order.

To deal with the problem of housing shortages and formulate a public housing policy, the government set up a public housing construction committee in 1955. U.S. aid provided a major source of the revolving funds needed for the extension of long-term, low-interest loans. According to the Public Housing Loan Act promulgated in 1957, such loans have a maturity of no less than 10 years and carry an interest of no more than six percent per annum. The main purpose of the loans was to help low-income laborers, farmers, fishermen, and government employees improve their housing situation. But since the money provided under the U.S. aid program was quite limited relative to the total need, the shortage of housing remained without much relief. In 1959, the Taiwan Provincial Government took over the job from the Central Government. To raise money, it was decided that all of the revenue from the land value increment tax between 1959 and 1966 and 25 percent of the revenue thereafter would be earmarked and put into a public housing fund. Public housing units may be constructed either by the government or by individuals with government loans or by private investors under government encouragement. However, land revaluation in 1964 sharply reduced the

amount of revenue from the land value increment tax, such that the availability of funds fell far below what was needed. In order to carry on the public housing programs, the Provincial Government resorted to bank borrowing and relending at subsidized interest rates. (2:59)

In 1968, due to rapid economic growth, industrial development and rapid urbanization, the economic and social structure changed greatly. The old housing policy and old construction methods were no longer suitable for modern society and modern city development. Also, the shortage of funds, difficulty of land acquisition, and lack of housing laws caused the public housing construction period to close. Under this situation the government set up two organizations. One is The Public Housing Construction Division (under the Ministry of Interior), the other is The Housing and Urban Development Department, Council of International Economic Cooperation and Development (under the Executive Yuan) which was the predecessor of the Council for Economic Planning and Development. The Council is in charge of housing research, and the introduction of a public housing concept, with which to educate government officials and the public. Since the cabinet was reorganized in 1972, it has emphasized balanced socio-economic development and has strongly supported the use of housing development as one of the important instruments for the promotion of social welfare. Recently, the existing housing policy has been reviewed under the direction of the cabinet, and the political climate for housing has greatly improved.

In reviewing the whole history of public housing construction, from 1955 to 1977 (22 years) a total of 132,946 units were constructed (see Table 2-1) averaging only 6,043 units per year. During the same time the population increased by 100,000,000 or an average of 454,545 persons per year. If all the population increases were to be accommo-

Table 2-1

Statistics of Taiwan Provincial
Public Housing Units by Year

Year	Housing Units	Total Cost NT\$
1955-1956	3,280	33,391,000.00
1957	3,501	29,928,000.00
1958	1,943	40,079,800.00
* 1960	18,579	71,713,301.02
1961	9,795	185,913,052.70
1962	7,839	229,197,968.60
1963	842	34,558,960.00
1964	13,955	531,854,167.00
1965	926	38,372,500.20
1966	12,352	597,380,480.00
1967	14,379	659,783,095.88
1968	9,226	442,973,280.00
1969	578	23,222,400.00
1970	2,077	106,020,200.00
1971	2,246	231,218,895.00
1972	1,340	93,696,520.00
1973	1,039	73,345,200.00
1974	6,637	509,732,254.00
1975	4,990	195,227,680.00

Table 2-1 (Continued)

Year	Housing Units	Total Cost NT\$
1976	3,487	145,125,685.00
1976-1977	13,935	2,364,461.400.00
Total	132,946	6,637,195,839.40

Remarks: U.S. \$ 1 = NT\$ 38 (NT\$ means: New Taiwan dollar) since 1978
 U.S. \$ 1 = NT\$ 36

*The Taiwan provincial government took over the public housing jobs since 1959 therefore no public housing was built that year.

Source: Committee of Taiwan provincial public housing construction.
Engineering Records of Taiwan Provincial Public Housing Construction. Taipei, 1978, p. 10.

The impact of this small number of additional units on the housing situation was obviously quite insignificant. Table 2-2 shows the various styles of housing built in the past 22 years. Most (48.7%) were general public housing, i.e., housing for low/middle income families. The other types each represented small percentages of the total units built. Table 2-3 shows the housing distribution by county and city. The most important are: Kaohsiung City, 11.4%; Taipei City, 10.5%; Taipei Hsien (county), 9.2%, and Changhua Hsien, 12.7% of the housing units. The figures for the other Hsien (counties) are very insignificant (see Map 2-1). Total construction cost was NT\$ 6,637,195,839, no more than U.S. \$200,000,000.

B. OPERATION OF CURRENT PUBLIC HOUSING PROGRAMS

This section of the report will describe how the public housing programs work.

1. Methods of Public Housing Construction:

- a). Government built: In urban, high population density areas, and their fringes, lands are supplied by the provincial government (either by purchasing private land or using public land). The government uses the technique of developing a new town or community in building public housing. After it is finished, the government will announce that it is for sale and accept applications from qualified low-income families.
- b). Consign built: In the areas where laborers, miners, farmers and salt laborers live, the provincial government will consign the companies, mines, factories, enterprises or groups to supply the land and build small scale public housing. Employees who match the regulations can apply

Table 2-2

Statistics of Taiwan Provincial
Public Housing Units by Style
1955-1977

Housing Style	Housing units	%	Total Cost NT\$
General Public housing	64,705	48.7	4,244,766,458.20
Laborer's Housing	3,715	2.8	411,432,015.00
Miner's Housing	355	0.3	30,211,200.00
Farmer's Housing	77	0.06	12,320,000.00
Fishermen's Housing	543	0.4	64,106,600.00
Salt Laborer's Housing	197	0.15	21,369,600.00
Housing built after disaster	20,334	15.3	357,705,661.02
Housing for Squatters	4,303	3.24	268,732,190.00
Housing for Government Employees	7,372	5.5	647,775.774.00
Housing Modified after disaster	13,445	10.1	9,062,400.00
By private investors under government encouragement	5,368	4.0	226,408,534.70
Exhibit Housing	78	0.06	3,755,683.60
Low Income Housing	12,454	9.3	339,549.722.88
Total	132,946	100	6,637,195,839.40

Source: Committee of Taiwan Provincial Public Housing Construction.
Engineering Records of Taiwan Provincial Public Housing Construction. Taipei, 1978, p. 11.

MAP 2-I

DISTRIBUTION OF TOTAL TAIWAN PROVINCIAL
PUBLIC HOUSING UNITS BY COUNTY

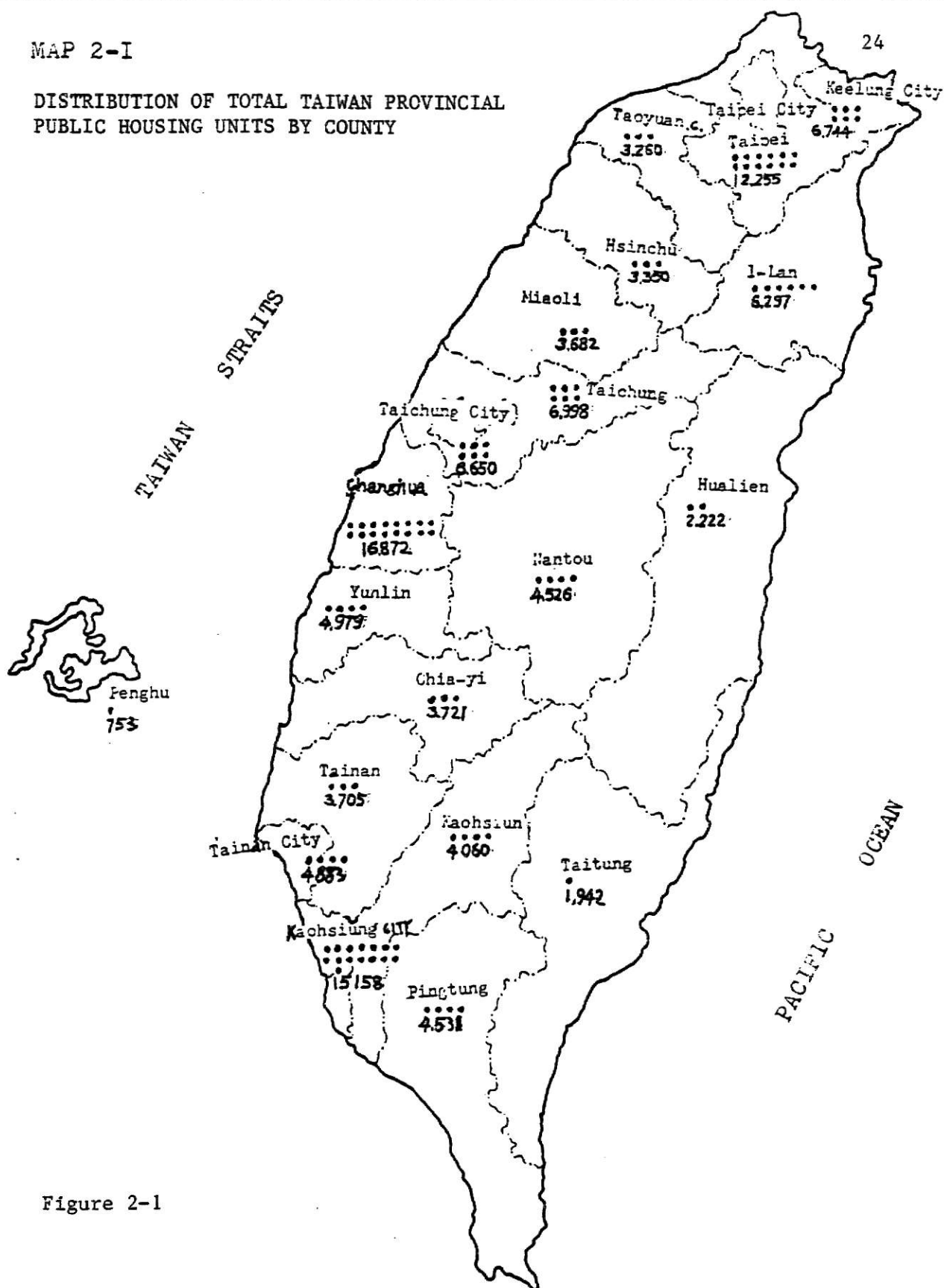


Figure 2-1

SOURCE: COMMITTEE OF TAIWAN PROVINCIAL PUBLIC HOUSING
CONSTRUCTION. ENGINEERING RECORDS OF TAIWAN PROVINCIAL PUBLIC
HOUSING CONSTRUCTION. TAIPEI, 1978. P.9

Table 2-3

Statistics of Taiwan Provincial Public Housing
Units by County/City
1955-1977

County/City	Housing Units	%	Total Cost NT\$
Keelung City	6,744	5.0	610,561,240.00
Taichung City	6,650	5.0	683,334,115.20
Tainan City	4,883	3.7	386,158,021.00
Kaohsiung City	15,158	11.4	1,236,118,495.25
Taipei Hsien	12,255	9.2	618,546,173.60
Tao Yuan Hsien	3,260	2.5	164,881,300.00
Hsinchu Hsien	3,350	2.5	225,541,200.00
Miaoli Hsien	3,680	2.8	127,952,800.00
Taichung Hsien	6,998	5.3	152,768,580.22
Changhua Hsien	16,872	12.7	234,772,550.00
Nantou Hsien	4,526	3.4	101,347,925.00
Yunlin Hsien	4,979	3.7	147,212,220.00
Chia-Yi Hsien	3,721	2.8	138,135,534.60
Tainan Hsien	3,705	2.8	216,934,500.00
Kaohsiung Hsien	4,060	3.1	218,530,454.45
Pingtung Hsien	4,531	3.4	158,003,694.88
Taitung Hsien	1,942	1.5	104,500,660.00
Hualien Hsien	2,222	1.7	132,179,642.00
I-Lan Hsien	6,297	4.7	197,438,800.00

Table 2-3 (Continued)

County/City	Housing Units	%	Total Cost NT\$
Penghu Hsien	753	0.6	35,393,340.00
Yangmin Shan	2,392	1.8	124,507,940.00
Taipei City	13,966	10.5	622,376,653.20
Total	132,946	100	6,637,195,839.40

Source: Ibid., p. 12.

for these houses in advance. The provincial government and the county government are in charge of supervision. The employees who have pre-applied for housing can select one person to supervise the design and construction.

c) Built by individuals with government loans: In some cases the government has issued loans for helping low-income people to build their own housing. These loans must be used for housing. The applicant must own the land and pay a certain percentage of the construction costs. The site and design must be approved by the government, but actual construction is the responsibility of the applicants. The advantage is that the builder can select any location and any style of housing thus easing the burden of the government in purchasing land. The disadvantages are that the housing is segregated by location, and the location doesn't match availability of public facilities, therefore, the living environment is far from ideal.

d). Built by private investors under government encouragement: The private investors must supply the land, construction plan, dwelling unit design, etc. subject to approval by the government. Then they will receive loans covering 50% of the total costs.

e). Built by the government's financial aid: For the very poor, the government will give a family NT\$ 35,000 for buying construction materials to improve existing housing units.

f). Tear down the old military officials' abodes and build public housing for the original occupants and other officers.

g). Build and rebuild rural homes: At this time, this is a small program with a total of only 1,000 units supported by the central government.

2. The Procedure of Public Housing Construction:

a). Acquisition of land: Location, environment, public facilities, etc., must be considered in the land acquisition process. The land must be surveyed by the county government officers and re-surveyed by provincial government officers and approved by them.

According to article 4 of the "Public Housing Community Project and Housing Design Standard" issued by the Ministry of Interior, the location of public housing must fit the following conditions:

(1) The location must enforce the sound development of the city, therefore, it must be in the residential area of the city plan, or be suitable for developing.

(2) The following land should be avoided:

- sloping land where the sun shines no more than 2 hours during the winter season.
- high grade farm land (using a 26 grade scale, farm land classified from 1 to 6 grade is considered high grade farm land.
- unsafe, or in noisy areas.
- land with soil conditions unsuitable for building which cannot be improved.
- lands too fragmented to be successfully consolidated.

b). Check design plans: Every public housing design must

follow Public Housing Community Projects and Housing Design Standards promulgated by the Ministry of Interior. The designs of all public housing must be checked by the local government and rechecked by the provincial government for compliance with the design standards. Both organizations must approve the designs, otherwise, the housing cannot be constructed.

c). Call for tender: From 1976 to 1977, public housing was built by the government or by consignment.

(1) Government built: The government supplies the land and is in charge of design. The government then calls for public tender to construct the housing.

(2) Consign built: The provincial government consigns or assigns the government's companies, factories, enterprises, to supply the land, and build public housing for employees of these facilities.

d). Check the applications: Public housing projects are helping low-income families to improve their housing situation. Each family is permitted to purchase only one house. They must fit each of the following qualifications:

(1) Have a household registration for more than six months.

(2) Have a spouse or 20 year old descendant living in the house.

(3) Applicant, his/her spouse or 20 year old descendant must live together and none have their own house.

(4) Fit the standard for low-income families publically announced by the Ministry of Interior each year in June.

(5) Applicant and his/her spouse have never applied for purchasing or receiving government loans to build public housing.

(6) Applicant has received approval for sale of his/her public housing unit and waited at least three years to apply for another public unit.

If listed squatters houses are voluntarily torn down, residents will be eligible to apply for public housing.

All applicants must fill out application forms, which are checked by the local government. If every thing complies with the regulations, then he/she can join a public lottery to decide whether he or she is eligible for a house. Next, applicants must again join the lottery to determine housing location. After completing this step they must go to the Taiwan land bank to sign a purchase and loan contract and pay the remaining purchase price. When everything is in order, he/she can move in.

e). Housing costs computation

(1) Construction cost: This cost includes housing construction expenses, utility bills, and other necessary expenses such as taxes, administrative expense, interest, etc.

(2) Land cost: The land cost is based on the public announced value and development charges.

f). Term and interest of loan: Loans are based on floor area of the house. Twenty pings (1 ping = $3.3 \text{ m}^2 = 35.51 \text{ ft.}^2$) are the limit for each family. Under this limit for a 2 story house the loan is NT\$ 8,000 per ping and

NT\$ 10,000 per ping for a 4 story house. If the floor area is more than 20 pings, the excess area must be paid by the buyers themselves. The loan is for a 15 year term and carries an interest rate of nine percent per annum. The principal and interest must be paid by the month.

3. Management of Public Housing and the Community:

According to the newly issued "Public Housing Act" Article 12 provides that unless approved by a public housing sale organization, (for example, The Taiwan Provincial Government, Taiwan power company, etc., as usually the builder was the sale organization), the owner cannot sell, mortgage, give to or exchange public housing with another person. If approved by a public housing sale organization, the organization has the first priority right to purchase those units which have been exchanged. If the organizations do not choose to act, the owner must sell only to applicants qualified to purchase public housing. Otherwise the deal is in vain. According to Article 13, if the public housing owner acts in the following ways he or she will be sent to court and their house will be taken back by the public housing sale organization.

- uses the houses illegally
- fails to pay the loan and interest for more than 3 months
- sells, mortgages, gives to or exchanges with another person, without approval by the public housing sale organization
- allows more than one household to live in the same house

- changes public housing for non-residential use or for rent without approval.

If the occupants rebuild, add floor area, change partitions, or modify the public housing, its safety will be threatened; therefore, the occupant will be informed by the public housing sale organization that the unit must be returned to its original state, otherwise the changes will be performed by the organization and the expense charged to the owner.

The details of management (Article 14) are as follows:

- a). The local government must set up a "public housing management station "to carry out the public housing management regulations.
- b). Projects with 50 to 300 public housing units must employ a manager and each additional 300 units requires one more manager.
- c). The management expenses come from the land value increment tax.
- d). The public housing manager stations are in charge of:
 - public housing before sale or rent
 - reporting the occupants who violate the public housing act and contract, add floor area, rebuild, or change for uses other than residential, etc.
 - cleanliness of the environment
 - concerning public housing and community conditions
 - managing the market and putting vendors in certain places
 - recording the transfer of public housing and the occupant's changing status

C. THE EVALUATION OF EXISTING PUBLIC HOUSING

In order to understand:

1. Whether public housing meets the needs of occupants
2. The advantages and disadvantages of public housing
3. Methods of maintenance public housing

The Housing and Urban Development Department, Council for Economic Planning and Development (H.U.D.D. of the Republic of China), made a survey on existing public housing which was built between 1976 to 1978. The sample total was 1,336 units, selected from 13,699 units or 9.75%. This survey contains basic information on public housing, such as: public housing physical conditions, occupancy, public facilities and services, sales, management and maintenance, comprehensive evaluation, etc. This data can be taken as a good reference for future programs. According to this survey, the following findings were made:

1. Public Housing Physical Conditions

a). Dwelling Styles: Mass and concentration are the principles of public housing construction. In urban areas, due to the limitations of urban land, and high costs of land, housing tends to be provided by high-rise buildings. However, in order to consider the characteristics of land, construction cost and occupier's hobbies, various styles of housing such as single family, multi-family and duplex housing plus buildings with under and over 5 stories in height, are needed.

The Table 2-4 indicates that 45.6% of the units are contained in buildings of under 5 stories in height (the greatest ratio), 26.4% are contained in multi-family buildings and 22.6% are in buildings above 6 stories in height.

Single and duplex family housing only accounted for 5.4% of the units. This phenomenon differs according to the builder. Among government-built houses, 49.6% are in apartment buildings under 5 stories high, and 30.2% are in buildings with over 6 stories. Among consign-built houses, 51.7% are multi-family apartments and under 5 story buildings accounted for 18.4% of the units.

The reasons for these differences are because the government-built houses are all located in urban areas, where the population density is very high and also the land is expensive. Therefore, the 5-story apartments are the best style. The consign-built houses are located in suburban areas, where land prices are lower so the multi-family apartments are considered the best style.

Table 2-4

Dwelling Styles of Public Housing

<u>Dwelling Styles</u> <u>Construction</u> Method	Single Family Housing	Multi Family Apt.	Under 5 Story Apt.	Above 6 Story Apt.	Total
Government built	21 2.1%	179 18.1%	491 49.6%	299 30.2%	990 100%
Consign built	49 14.8%	171 51.7%	111 35.5%	0 0	331 100%
Total	70 5.3%	350 26.5%	602 45.6%	299 22.6%	1,321 100%

Source: Housing & Urban Development Department, (H.U.D.D.) Council for Economic Planning and Development, Report on Public Housing Existing Occupants Survey. Taipei, 1981, p. 25.

b). According to the bylaw of public housing, sales and rent: the public housing floor area is limited at 12 pings (1 ping = 3.3 m^2) to 24 pings, but the maximum area for consign built houses are 28 pings. According to the survey, the average floor area for each family is 22 pings (see Table 2-5).

c). The laws restrict rebuilding, increasing floor area, changing partitions or other modifications, but according to this survey, 15.5% have changed partitions, 5.8% have increased floor areas of the balcony or into the yard, 43.5% have added iron balustrade on window or balcony. These figures indicate that the design of public housing is not ideal. Table 2-5 indicates the consign built houses have better partitions, better bathrooms, and better kitchens than government built housing, especially the kitchen. Only 59.2% of the families are satisfied with the government built kitchen. Most complaints are because of the small floor area, poor equipment, the lack of sufficient number of toilets, and poor drainage systems in the kitchen.

2. Occupancy

a). According to this survey, the average number of families in each unit is 1.03. The average number of occupants per unit is 4.9 persons, and the average floor area for each person is 4.6 pings.

b). Most families consider the floor area of public housing units too small. Therefore, it would appear that there must be a high percentage of units with family members

Table 2-5

Public Housing Physical Condition

Item	Government Built	Consign Built	1 ping = 3.3 m ²
			Average
Average floor area for each family	21.3 ping	26.4 ping	22.6 ping
Percentage with changed partitions			15.5%
Ratio of increasing floor areas on balcony or yard			5.8%
Percentage of adding iron balustrade on window or balcony			43.5%
Percentage of families satisfied with the partition	78.4%	84.3%	79.9%
Percentage of families satisfied with the bathroom	68.6%	75.2%	70.6%
Ratio of satisfaction with the kitchen	59.2%	72%	62.4%

Source: Ibid, p. 6.

always sleeping in the living room. However, Table 2-6 indicates that only 3.7% of the families have a family member always sleeping in the living room. This indicates that the informal observation suggesting that the floor area is too small is not correct.

c). The generally recommended percentage of family income for monthly public housing payments is 25%. Table 2-6, however, shows that the average payment is 32.6%, with government built housing taking 36.5% of the average family income.

d). Eighty-three and four tenths percent of the buyers in charge of the family's economy live and work in the same city, and 84.3% are satisfied with the proximity of housing to their work place. These figures indicate that most of the public housing locations are quite close to the work place.

e). Eight-six and 1 tenth percent feel in harmony with other occupants, probably because they have the same social status.

f). Eighty-eight and nine tenths percent of household heads feel an improved living standard. This shows the positive meaning of public housing and suggests, along with the response to other questions, that public housing is important to Taiwan.

3. Public Facilities and Services

Public facilities and services are one of the main responsibilities of city government. Originally, these were not the responsibility of public housing authorities due to the sufficiency

Table 2-6

Occupancy of Public Housing

Item	Government Built	Consign Built	Average
Average family members in each unit	1.04	1.01	1.03
Average number of occupants per unit	4.8	5	4.9
Average number of family occupants per unit	4.6	4.9	4.7
Average floor area for each person	4.4 ping	5.3 ping	4.6 ping
Percentage with family members always sleeping in living room	4.5%	1.2%	3.7%
Percentage of family income for monthly payment	36.5%	21.3%	32.6%
Percentage of housing buyers in charge of the family's economy	71.4%	86.5%	75.2%
Percentage of buyers in charge of the family's economy who live and work in the same city	85.6%	81.1%	83.4%
Percentage of family heads satisfied with the proximity of housing to their work place	83.9%	85.4%	84.3%

Table 2-6 (Continued)

Item	Government Built	Consign Built	Average
Average number of employed family members	1.5	1.6	1.5
Percentage of occupants feeling in harmony with other occupants	82.8%	95.1%	86.1%
Percentage of household heads feeling an improved living standard	87.4%	93.4%	88.9%

Source: Ibid, p. 6.

of public facilities and services effecting the quality of community living. If the city government does not provide the necessary facilities and services to public housing projects, it is necessary for the housing authority to provide them.

The public facilities and services include: children's playgrounds, markets, schools, hospitals, mass transportation services, etc. According to the survey, these facilities and services are insufficient.

a). The shortage of children's playgrounds is very widespread. There is only 47.4% occupant satisfaction with these facilities. The government-built housing has a higher satisfaction rate than of consign-built housing. The reason is the former are located in urban areas. If the government built housing provides no children's playground, the children still can find one in the vicinity. In the case of the latter, due to the small size of the project and the suburban location, the shortage is obvious (see Table 2-7).

b). Buying vegetables, fruits and groceries is convenient for residents of urban housing projects. If the public housing community has no market, people still can shop in neighboring markets. Table 2-7 indicates that 62.9% of the occupants are satisfied with market proximity, government built is higher than consign built. This is because the small number of units in consign built projects cannot support convenient shops in the project.

c). Sixty-seven and 5 tenths percent of the occupants were satisfied with kindergarten proximity. As to primary school,

Table 2-7

Public Facilities and Services of Public Housing

Item	Government Built	Consign Built	Average
Occupant satisfaction with children's play yards	51.8%	33%	47.4%
Occupant satisfaction with market proximity	72.3%	59%	62.9%
Occupant satisfaction with kindergarten proximity	66.8%	69.5%	67.5%
Occupant satisfaction with primary school proximity	71.1%	70.8%	71%
Occupant satisfaction with junior high school proximity	74.4%	68%	72.7%
Occupant satisfaction with hospital proximity	56.6%	61.7%	57.9%
Occupant satisfaction with public transportation service	66.8%	67.6%	67%
Occupant satisfaction with parking facility	35.3%	61.5%	41.8%

Source: Ibid, p. 6.

the satisfaction is better, 71% of the occupants are satisfied. This is because a nine-year course of education is compulsory and thus primary and junior high school are widespread.

d). Hospitals are not required by urban planning law. However, they are important factors in the selection of a house. According to this survey, only 57.9% of the occupants were satisfied with hospital proximity. This figure is very low suggesting the need for a program in hospital and medical center development.

e). As to public transportation service, the percentage is low. Only 67% feel satisfied. Most of the occupants use the city bus for transportation, therefore, the public housing planner should pay more attention to transportation services.

f). The parking facilities are very poor. According to the survey a number of the occupants use bikes or motorcycles for transportation, with some cars in use. Some have push cars. However due to the lack of consideration for parking facilities in public housing projects, the occupants always park their bikes or motorcycles on public stairways or road sides causing inconvenience and congestion. Thus only 41.8% of the occupants are satisfied with parking facilities. This figure is very low and indicates that parking problems are very serious, especially for the government built housing for which the percentage of satisfaction is only 35.3%.

4. Sales, Management and Maintenance of Public Housing

- a). The purpose of public housing projects is to help low-middle income people to have their own house. Thus the house must be inexpensive. According to this survey, the average price of housing units is NT\$ 397.467 (during that time the current rate was U.S. \$ 1 = NT\$ 38). Seventy-three and two tenths percent of the occupants consider public housing to be inexpensive (Table 2-8).
- b). In order to maintain the purpose of public housing projects, the house and land cannot be sold, mortgaged, given to or exchanged with other persons without the approval of the public housing sale organization. Because only 87% of the occupants understand these limitations, there are still many violations.
- c). As to the environment, 77.9% feel that it is quiet. Seventy and seven tenths percent are satisfied with the cleanliness of public stairways and 77.3% are satisfied with the cleanliness and beauty of the environs. Seventy-four and five tenths percent are satisfied with the garbage collection, therefore, in general the environment can be considered to be adequate.

5. Comprehensive Evaluation

This evaluation focused on the public housing physical conditions, occupancy, public facilities, sales, management and maintenance, etc. all put together. It is a comprehensive evaluation, made by the occupants. Only they can make a correct evaluation because they are the most influenced by public housing. According to this survey, 89.6% of the family income earners

Table 2-8

Sales, Management and Maintenance of Public Housing

Item	Government Built	Consign Built	Average
Average price of housing unit	NT\$ * 401.920	NT\$ * 384.990	NT\$ * 397.467
Ratio of occupant considering housing price is inexpensive	72.1%	76.1%	73.2%
Ratio of understanding that public housing can't transfer to the other person	88.8%	82%	87%
Ratio of feeling the public housing community is quiet	74.3%	87%	77.9%
Ratio of feeling satisfaction with the cleanliness of public stairways	67.1%	77.8%	70.7%
Ratio of feeling satisfaction with the cleanliness and beauty of the environment	75.3%	83.3%	77.3%
Ratio of feeling satisfaction with garbage collection	75.1%	72.6%	74.5%

Source: Ibid., p. 6.

* U.S. \$ 1 = NT\$ 38

feel satisfied with the environment (see Table 2-9). Only 3.2% plan to move from public housing and 87.4% never plan to move (see Table 2-10). Though these 87.4% may not always feel satisfied with public housing, it is certain that there is not a strong dislike for it or that there is no alternative that they can afford. (1:1-127)

Table 2-9
Comprehensive Evaluation of Public Housing

Comprehensive Evaluation	Government Built	Consign Built	Average
Ratio of feeling satisfaction with the public housing community	88.7%	92.5%	89.6%

Source: Ibid., p. 6.

Table 2-10
Attitudes Toward Moving

Move Out -----				
Construction Method	Plan to move	Are Thinking about moving	Never Plan to move	Total
Government Built	34 3.4%	102 10.3%	856 86.3%	992 100%
Consign Built	9 2.7%	22 6.6%	304 90.8%	335 100%
Total	43 3.2%	124 9.3%	1,160 87.4%	1,327 100%

Source: Ibid., p. 127.

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Chapter 3

PRESENT PUBLIC HOUSING PROBLEMS AND THEIR ANALYSIS

As previously mentioned, from 1955 to 1977, in 22 years, the government had built 132,946 public housing units or an average 6,043 units per year. This disappointing record may be attributed to the following major causes:

A. LACK OF GOVERNMENT ATTENTION

1. Although the government recognizes the importances of public housing for the improvement of living conditions and socio-economic development, its priority in the national budget has been very low, compared with that assigned to industrial and infrastructural development, such as power, oil refining and transportation.
2. While the government began to heed the need for public housing as early as 20 years ago, neither a national policy of housing development nor long-range and short-range construction plans have ever been worked out. (5:60)

B. LAND PROBLEMS TOO SERIOUS

1. Land problems analysis (Part 1):
 - a). Statutes, policies, and plans which affect housing development: Land is the basic element in public housing construction, without land there is no conventional housing. It is necessary to understand some of the land statutes and other laws relating to land. According to Article 163 of the Constitution of the Republic of China:

"The land within the territory of the Republic of China belongs to all the people, the land ownership that the people have obtained in accordance with the law, shall be protected and controlled by the law. Private land shall be taxed and purchased according to its price by the government". This article clearly states that, just like most democracies in the free world, the Republic of China permits the existence of private land ownership, but the government has the power of eminent domain over private land.

In order to prevent speculation, Taiwan has carried out the "Equalization of Land Rights" policy, which is based on Dr. Sun Yat-Sen's doctrine for the purpose of solving the land problem. The land owner reports the value of his land to the government, and the government levies taxes or purchases the land according to the reported value. When he sells his land, any unearned increment will go to the public because the increment obtained as a result of public efforts should be shared by the public. The Equalization of Land Rights Statute promulgated in 1954 has been repeatedly amended in hopes of achieving the goal of the land policy. (2:17)

The other factor which effects housing development, is the land use plan. The physical development planning in Taiwan has had a long history. Beginning with the enforcement of the Taipei City Plan in 1897, places having an urban plan totaled 72 acres by 1952, and this number increased to 268 in 1976. Almost every basic administrative unit has had an urban plan to guide its land use and urban

development. The past planning history may be divided into the following three stages:

(1) In the first stage, from 1897 to 1960, individual towns and cities were taken as planning units.

Consideration was given to the individual requirements of the individual area, and the planning purpose was to guide and control development activities of the private sector.

(2) In the second stage, from 1961 to 1970, regions, together with individual towns and cities, were taken as planning units. The main concerns were the identification of regional development problems and the formulation of development goals and policies. For each region, proposals on the distribution of population and economic activities, patterns of land use, development and preservation of natural resources, and establishment of transportation networks were set forth.

(3) In the third stage, from 1971 to the present, the Taiwan area as a whole, with its various regions, was taken as the planning unit. The main concern in planning was the allocation of major economic activities and physical development by region. Urban development is now considered an integral part of the comprehensive development of Taiwan. In order to facilitate planned development, the Regional Planning Law was enacted in 1974, in addition to the promulgation of the Urban Planning Law, in hopes of achieving

the goal of overall land use planning.

b). Basic reasons for the land problems of housing: The basic problem of providing land for housing in Taiwan is the scarcity of lands. As mentioned in Chapter 1, the plains and hilly areas, which account for two-fifths of Taiwan's total land area, must be utilized for self-sufficient food supply in addition to use for housing, industrial and commercial purposes. One of the main tasks in land use planning is to coordinate the requirements of urban land with those of agriculture land. Land available for urbanization is very limited. Owing to rapid economic development, urban growth within the metropolitan regions has been especially fast, under the influence of the location of industrialized areas. Competition between urban land use and agricultural land use has been very intense, especially within the metropolitan regions in the north and in the south. Because land is immovable, the problem of land for housing is most serious in these areas.

Basically, careful land use planning appears to be the proper method to use land effectively. Owing to limitations of government finance and manpower, however, all that can be done at this time is to control land use passively. As to the active development and the promotion of effective land use, there is still a long way to go to reach the ideal. For this reason, failure to provide housing land at the proper time and at the proper places, relative to actual demand, has resulted in a serious problem. Mismanagement

of related matters further aggravated the land problems. For example, local governments at various levels sometimes sold land to make up for their budget deficits, instead of using it as an effective instrument to regulate supply and demand in the land market. As a result, when government became needy of land afterwards, they often found it difficult to satisfy their requirements. Therefore, insufficient government attention paid to solving the housing problem, is in itself, another reason for the housing land problem. Because of an improper concept of local government, the urban plan, which should be used as the guideline for urban development, is often in the form of impracticable charts and tables, resulting in a land problem.

c). Land problem in housing: From the above, it can be seen that housing construction in Taiwan is faced with the following problems:

(1) Land prices are too high for the people. Owing to rapid economic development, the people's standard of living has been greatly improved, but among the four basic necessities of food, clothing, housing and transportation, housing has become an urgent problem because of sky-rocketing land prices. Thus, to a certain extent, the results of economic development have been offset by rising land prices. Take for example, Taipei, the largest city in Taiwan. During the period from 1953 to 1976, a comparison between

the 280% rise in commodity prices and the 1,175% increase in family income indicated that the standard of living was greatly improved, but the increase in family income was disproportionate to the 13,290% rise in land prices, as shown in Table 3-1.

Table 3-1

Comparison of Family Income, Commodity Price,
and Land Price Indexes in Taipei City

Year	Commodity Price Index	Family Income Index	Land Price Index
1953	100	100	100
1976	280	1,175	13,290

Source: Housing and Urban Development Department, Council for Economic Planning and Development. 1978.

In other cities, land prices also rose considerably under the influence of high prices of land in the urban centers. Because land prices are high, it is very difficult to acquire a building site. Almost half of the cost of a building construction project will be the cost of the land. This causes housing prices to rise considerably. It is estimated that a family has to now spend its entire income of a period of 3.6 years to buy a house. Therefore, land prices have risen much higher than average people can afford.

(2) Urban development is very fast, and the development of public facilities is believed to be too heavy a burden on the local government's finances. Because in the past the government has chosen economic growth and industrialization over housing, taxes were kept low, but lack of funds made it difficult to improve the quality of the environment in which people live.

Population is unequally distributed and concentrated in a few metropolitan regions, and urban development is particularly fast in these areas of high housing demand. Therefore, the development of public facilities can not keep pace with the requirements of actual urban development and constitutes a very heavy burden on the local government. In Taipei City, for example, there are 2,542 hectares of land still reserved for public facilities. It is estimated that the acquisition of land alone would require the whole budget of the city government for four years. This, plus construction expenditures, is completely beyond the city government's financial capability under present taxing structures.

(3) Housing development is in disorder, and thus public facilities can not be provided efficiently. Urban plans, promulgated by local governments, have aimed at ensuring that urban development does not intrude excessively upon agricultural land, and at safeguarding self-sufficiency in food production. The pressure of the intrusion upon agricultural land

has been somewhat alleviated. In the course of the implementation of the urban plan, however, there is no phased program. Within the planned area, any lot of land permitted by the urban plan for housing may be used for construction very quickly, because of strong housing demand. As a result, land in the areas where public facilities are insufficient, is also used for building, since land prices are relatively low there, even though the locations may still be unprepared for development. On the other hand, developed areas, where public facilities have been fully provided, are often left unused, or less than fully used, because of high land prices. Because housing development is in disorder, the public facilities can not be provided efficiently.

(4) Because of high density, each individual owns only a small piece of land. This is a disadvantage for large-scale development of building land. "To have land means to have assets; to have assets means to have something usable". This saying reflects a typical concept of the Chinese people concerning land. Regardless of wealth, everyone desires to possess his own piece of land. Yet, as a result of repeated transfers and inheritance, individually held plots are often very small. When the government, or a private organization, prepares a land development project, they often encounter many small landowners who maintain different opinions.

A deed holder's whereabouts may even be unknown.

Frequently small parcels of land can not be transferred because of inheritance or other problems, hindering public and private housing development projects. (2:19-22)

Besides, Taiwan does not have the power of eminent domain for housing which would make it possible to assemble the necessary land for public housing.

2. Land problems analysis (Part 2):

Land for public housing use can be obtained from the following sources:

- private land
- public land
- urban land consolidation
- developed new towns
- rebuilt military official's abodes

In actuality, only the techniques of using public land and rebuilding military official's abodes can be considered realistic methods for obtaining land for public housing, the others are very difficult to implement. The reasons are:

a) Private land

(1) In the Public Housing Act and other relevant statutes, there is no provision for the acquisition of private land for public housing. In the absence of such provision, the government is not only without authority to acquire land, but also ineffective in negotiating for the purchase of private land.

(2) According to the current land law and the "Bylaw of Implementing Equalization of Land Rights", the government will assess every piece of private land, and announce current value every year. The owner should report their land price base on the official assessed price. The reported price can be 20% more or 20% less than the assessed price. It is the reported price that shall be taxed and purchased by the government. Because government's assessed prices are much lower than market value, when the government wants to purchase private lands, it always will be refused by land owners.

(3) When an individual sells his land to the government, he has no way to understate the amount of the transaction or evade the land value increment tax. For this reason, most people are unwilling to sell their land to the government.

(4) Private land is very much fragmented. A large construction site usually involves many landowners. Negotiations for its purchase are time-consuming and can be undermined by one or several uncooperative individuals.

b) Public land: There are four kinds of public land: national land, provincial/city (under central government) land, county/city (under provincial government) land, and town/village land. The total area of public land has been counted as one-third of the total area of the Taiwan province. These public lands are managed by many different

levels of government and departments. If any level of government needs public land, it can apply to the government managing the land and to the Executive Yuan for approval (Article 26, Land Law). In general, the government which needs land must obtain an agreement from the managing government, but negotiations always take a long time.

The Public Housing Act does provide for the use of state-owned land as sites for public housing, but each parcel is limited and not necessarily suitably located, it may offer little relief for the shortage of construction sites. Other reasons for the shortage of public lands are:

- (1) The managing government would rather sell their land to the public than provide for the public housing use. If it sells to the public the land is sold at market value, which can be used to ease its own budget problems, whereas, if it sells for public housing use, it must be sold at the assessed price. Therefore, negotiation for purchasing public land is always refused by the managing government.

- (2) Prices for urban land have sky-rocketed, due to speculation, and government housing authorities can not afford to buy such land. On the other hand, while land in suburban areas may be lower priced, its poor access to job opportunities and social services makes it unattractive for government purchase.

- (3) The political division of land has aggravated the problems of housing. For instance, the Taipei City government can not buy land in Taipei Hsien, where land

prices are lower, and neither can the Kaohsiung City government in Kaohsiung Hsien (County). Because Taipei Hsien or Kaohsiung Hsien also need land to build public housing for their own employees, the law prohibits city government from buying land in the county.

c). Urban land consolidation: Urban land consolidation means that in implementing an urban plan, within a designated area, all small pieces of land not suitable for building are assembled for replotting. After replotting, each piece of land is more suitable for use, thus enhancing the economic scale of land and raising the efficiency of land use, because of better access.

Urban land replotting is an important step in integrating land improvements. Not only can it promote efficiency of land use, but through replotting, a part of land for public facilities can be obtained without compensation. Since after consolidation, a certain percentage of private land will be obtained by the government as a replotting expense, it is suggested by some scholars that this land, together with public land, can be used for the construction of public housing.^(3:7-15) The land obtained in this way occupies an average of 9% of the total replotting area, yet, because most of this 9% must be sold to obtain money, to compensate private owners who lost acreage through replotting, only about 3% of the total replotted area is actually taken by the government, and hence, available for public housing use. Over the last 20 years, the total replotting areas totalled 2,000 hectares, yet only 60 hectares could be used, hence

the urban land consolidation can't solve the problem of land acquisition for public housing use.

d). Development of a new town: It is suggested that government can use part of new town land for public housing use. In Taiwan, the government has used urban land consolidation to develop a new town. It's disadvantages have already been mentioned above.

e). Rebuilding military official's abodes: The military official's abodes are simple structured one story houses. Most of them are very old and dilapidated and should have been torn down and rebuilt. According to the 1981 housing projection, there are 60.5 hectares of these houses which can be rebuilt, producing 14,700 housing units, of which 5,837 could be distributed to the original occupants, and 1,007 units distributed to other officials, leaving 7,856 units for low income families. (6:4)

C. LACK OF A SOUND FINANCIAL SYSTEM

The government's budget for public housing is mainly obtained through the following methods:

1. Budgeting for public affairs: This budget pays the salaries and other expenses of the public housing authorities.
2. The public housing construction fund: This is the main source of financing public housing which comes from the government's budget and bank loans. The fund originates from the land value increment tax, (4:00) and the annual appropriation from the budgets of central governments. Twenty percent of the land value increment tax will be appropriated for the public housing construction fund. These are the government funding

sources for public housing construction. Because low income families find it very difficult to raise enough money in a short time to pay for a dwelling unit, they depend on the government for loans, and in consideration of their poor repayment ability, the maturity of the loans should be as long as possible, and the interest rate should be as low as possible. Moreover the loans should be available in large amounts if a number of low income families are to be helped. As mentioned in this report, the percentage of family income for monthly public housing payments is 32.6%. This figure indicates a long-term and low-interest rate loan is needed. Current housing loans have a maturity of 15 years and carry an interest rate of nine percent per annum. However, they are financed through bank borrowing at an annual interest rate of 12.18 percent, with the interest difference subsidized by the government. This amount of government subsidy is bound to accumulate over time and will soon become too much of a burden without affecting other governmental spending priorities or the level of taxation. Moreover, bank accommodations are supported mostly with one year and two year savings deposits, and short term deposits being used for long term loans is certainly not a good practice. Therefore, it is imperative that funds needed for housing loans be raised from other sources that are more suitable.

D. LACK OF STRICT ENFORCEMENT MANAGEMENT AND MAINTENANCE REGULATIONS

1. Without defining "low income families": The current Public Housing Act states that public housing is to sell or to lease to low income families, military officials, government employees and teachers. According to The Public Housing Sale

and Release Act Article 4, low income is defined as follows:

"If the applicant's family income fits the standard, announced by the government, it can be qualified as a low income family".

Unfortunately the government never announced this standard, therefore, the public housing authorities consider families lacking their own house as low income. Due to the limited amount of public housing units, the occupants must represent actual low income families, otherwise, the essential meaning of public housing will vanish.

2. Inability to enforce legal requirements for rebuilding, changing, selling, mortgaging, giving or exchanging housing with another person: According to the Public Housing Act, Article 12, 13, 14 (as mentioned previously in this report), the government has sound regulations to manage public housing and prevent it from being sold, mortgaged, given to or exchanged with unqualified persons. However, there are still many violations, as to rebuilding, adding floor area, changing partitions, etc. These violations indicate that the public housing authorities do not pay much attention to carrying out the Public Housing Act. Those projects that were constructed with government aid by private individuals, are widely scattered and do not even lend themselves to management at all.

3. The public housing authorities lack of staff: Early public housing was constructed by individuals with government loans. The government played the role of providing financial aid, the other roles were performed by individuals, therefore, there were only a few staffs in charge of public housing affairs in government departments.

After the promulgation of the Public Housing Act, the

government took over all roles, including land acquisition, fund raising, construction, sales, release, checking applications, management and maintenance, etc. Management became more complex than before and unfortunately the staff was not increased.

The staff in provincial government number only 34 persons and the local government totals only 72 persons. For example, in Kaohsiung City, from 1966 to 1967, the city government built 3,638 public housing units, but had only 3 formal staff members. This insufficiency is very obvious. (1:160)

E. WEAKNESS OF GOVERNMENT MACHINERY FOR HOUSING

In spite of government efforts to provide better housing for upgrading the living conditions of low income families, there is much need for stronger organization at the various levels of government. For example, the Ministry of Interior has only a small section with a few people in charge of public housing, which is far from being adequate for the performance of its functions. The Ministry also has a Public Housing Promotion Committee with members coming from relevant government agencies at various levels, but the committee is of an ad hoc nature and seldom meets. (5:73) It appears that the government needs a strong organizational framework if it is to implement public housing programs.

PLANNING AND DESIGNING PROBLEMS

Planning and designing of public housing have a great impact on the environmental and living conditions of a residential area. Most urban residential building in Taiwan, however, are designed and constructed individually without coordination with the overall urban development plan. The

result has been an unruly spread of building and little open space, adverse to the rational utilization of urban land and maintenance of a healthful environment.

G. BUILDING MATERIALS AND TECHNIQUES

1. The building material industry in Taiwan has expanded rapidly in the past. Not only can it satisfy domestic market needs, but it can also engage in export. However, occasional shortages of building materials, particularly cement, reinforcing bars and bricks, are still experienced, resulting in price rises and delays in construction. It is desirable, therefore, that long-term public housing programs be closely coordinated with plans for development of the building material industry to ensure ample supply at all times.

2. The lack of skilled construction workers is also an important problem. Educational and training institutions should make greater efforts to meet the future demand of public housing programs for such workers.

3. Building materials and techniques affect not only building safety and costs, but also living conditions of the occupants. Hence, a research institution, such as the Academic Sinica or the National Science Council, should be designated to search for ways for their improvement. (5:72)

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 - a). Title change: No matter what kind of transfer, the original owner should pay the land value increment tax.
 - b). Every 10 years without a change in title: The 10 years is counted from the first government determination of the original land prices. If the current value is 200% of the originally assessed value, the owner must pay 20% of all value increase increments over 100% in increment tax. If current value is 300% of the original value, 20% is paid on the first 100% increase and 40% on the second 100% increase. When the value is 400%, 20% is paid on the first 100% increase, 40% on the second and 60% on the third 100% increase. All increments over 400% are taxed at 80%.

To illustrate, if the originally assessed value is \$100.00 and the current value is \$200.00, there is an increase of \$100.00. The owner must pay \$100 x 20% in increment tax. If the current value is \$250.00, then 20% on \$100.00, 40% on \$50.00 (the increment above 200% assessed value) must be paid.
5. Pama, R. P., Angel, S. and DeGoede, J. H., ed., Low-Income Housing, Technology and Policy. Vol. 1 Bangkok: Asian Institute of Technology, 1977.
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Chapter 4

PUBLIC HOUSING DEMANDS

As this report mentioned, although the government recognized the importance of public housing in improving living conditions, and providing socio-economic development, the previous public housing programs were very fragmented, without middle-range, long-range plan, or comprehensive consideration. Shortages of funds and difficulty of land acquisition are considered the reasons. However, the key is that the public housing authorities don't have a forecast for housing demand, therefore, they can't prepare housing investment and land acquisition programs in advance.

This chapter will discuss middle, and long-range public housing forecasting techniques.

A. MIDDLE-RANGE PUBLIC HOUSING DEMANDS

Public housing demand forecasting is the guidepost for various government levels to establish their own annual housing projects. This forecasting is based on the following propositions:

1. Estimating the amount of low-income families lacking their own house, without considering old and dilapidated houses.
2. Surveying the number of squatter houses that existed before 1965.
3. Assuming that urban area housing demands are stronger than rural area demands. In urban areas, the public housing problem is the shortage of quantity in rural

areas, the problem is the age of structures and lack of quality.

According to the propositions above, there are several factors which can be considered as factors influencing estimation of public housing demand.

1. Number of Families Which Have Spouse or Over 20 Year Old Relatives Living Together

According to the Public Housing Act (Article 4): The public housing buyer or tenant must have a spouse or relative over 20 years old living together. Table 4-1 shows there are 2,345,200 of these families in urbanized areas.

2. Number of Low Income Families

As this paper mentioned before, the government doesn't announce the standards for a low income family, but in order to make a forecast, a definition is needed.

It is reasonable to consider a family with an income below the average family income of that area as a low income family. Since qualified public housing buyers must have the ability to pay the housing cost, very low income families must be detected. Now, the question is how to decide which families are low income and which are very low income. Therefore, a standard is needed. Since the family income of urban areas or large cities is always higher than that of rural areas or small cities, the standard must be different.

Table 4-2 was made according to family income. The first step is to compile family income figures and arrange them from the lowest to the highest. The families representing the lowest 40% (or 50%, 60%) of all incomes, yet with an income higher

Table 4-1

Number of Families with Spouse or Relative Over 20 Years Old
Living Together in Urbanized Areas (1979)

County / City	Number of Families	Number of Farmer's Families	Number of Families in Urbanized Areas	Number of Families with Spouse or Relatives	Percentage of Families with Spouse and Relatives	Number of Families with Spouse or Relatives in Urbanized Areas
	(1)	(2)	(1)-(2)=(3)	(4)	(4)÷(1)=(5)	(3)×(5)=(6)
Total	3,593,061	898,941	2,694,720	3,160,164	87.95	2,345,200
Taipei City	542,041	6,500	535,541	444,808	82.06	439,500
Kaohsiung City	260,496	6,725	253,771	229,788	88.21	223,900
Taiwan Province	2,790,524	885,116	1,905,408	2,485,568	89.07	1,681,800
Taipei	476,828	31,198	445,630	404,090	84.75	377,700
I-Lan	83,043	27,296	55,747	74,517	89.73	50,000
Tao Yuan	205,336	42,374	162,962	172,519	84.02	136,900
Hsinchu	119,007	36,707	82,300	106,298	89.32	73,500
Miaoli	93,159	44,249	43,910	86,250	92.58	45,300
Taichung	188,975	66,798	122,177	167,557	88.67	108,300
Changhua	205,515	107,430	98,085	195,483	95.12	93,300

Table 4-1 (Continued)

County / City	Number of Families	Number of Farmer's Families	Number of Families in Urbanized Areas	Number of Families with Spouse or Relatives	Percentage of Families with Spouse and Relatives	Number of Families with Spouse or Relatives in Urbanized Areas
	(1)	(2)	(1)-(2)=(3)	(4)	(4)÷(1)=(5)	(3)×(5)=(6)
Nantou	98,384	50,139	48,245	91,334	92.83	44,800
Yunlin	145,163	93,700	51,463	136,383	93.95	48,400
Chia-Yi	157,840	65,496	92,344	144,208	91.36	84,400
Tainan	187,854	97,245	90,609	171,886	91.50	82,900
Kaohsiung	191,244	64,327	126,917	173,106	90.52	114,900
Pingtung	165,822	74,903	90,919	153,049	92.30	83,900
Taitung	56,675	27,589	29,086	48,236	85.11	24,800
Hualien	71,579	27,356	44,223	60,218	84.13	37,200
Penghu	20,115	9,769	10,346	17,920	89.09	9,200
Keelung City	73,994	771	73,223	63,887	86.34	63,200
Taichung City	130,181	9,619	120,562	111,288	85.49	103,100
Taiwan City	119,810	8,150	111,660	107,339	89.59	100,000

Sources: Taiwan Provincial Agriculture Department, 1979.

Table 4-2 (Continued)

County / City	Number of Families	GRANT FOR PUBLIC HOUSING		HOUSING FOR VERY LOW INCOME FAMILIES		
		Range of Low-Income Families	Number of Families	%	Range of Very Low Income Families	Number of Families
Chia-Yi	157,840	60%-10%	78,922	5.11	10% below	15,784
Tainan	187,854	60%-10%	93,927	6.09	10% below	18,785
Kaohsiung	191,244	60%-10%	95,622	6.20	10% below	19,124
Pingtung	165,822	60%-10%	82,911	5.37	10% below	16,582
Taitung	56,675	60%-10%	28,337	1.84	10% below	5,668
Hualien	71,579	60%-10%	35,789	2.32	10% below	7,158
Penghu	20,115	60%-10%	10,057	0.65	10% below	2,010
Keelung City	73,994	40%-5%	25,897	1.68	5% below	3,700
Taichung City	130,181	40%-5%	45,563	2.95	5% below	6,509
Tainan City	119,810	40%-5%	41,933	2.72	5% below	5,990

Source: Taiwan Provincial Police Department, 1979

than the lowest 5% (or 10%) can be considered low income families. Of course, if the families' income is in the lowest 5% (or 10%) they will be considered very low income families. Using this method, there are a total of 1,542,712 low income families (Table 4-2).

3. Number of Families Without Their Own Dwelling Units

This data is obtained from the family income survey. Low income families have low percentages of home ownership (Table 4-5).

4. Number of squatter houses

Table 4-3

5. Number of Military Officials Abodes

Table 4-4

The above factors all effect public housing demands, but according to the Public Housing Act, the family must fit conditions 1-3. If a family does not fit conditions 1-3, it may still be allowed to grant buy or rent a public house if it is living in a squatter house. Therefore, the total public housing demand is 535,260 (Table 4-5) and including the military officials' abodes it will be 630,749.

B. LONG-RANGE HOUSING DEMANDS

1. Housing Need and Housing Demand

Housing need refers to the shortage of housing in a community calculated on the basis of certain assumptions with respect to living conditions. It is essentially a social concept and has nothing to do with individual families' financial situations or specific preferences. Housing demand, on the other hand, is computed on the basis of individual families' desire and ability to pay. It involves such constraints as public and private

Table 4-3

Number of Squatter Houses (1979)

County / City	Squatter houses	%
Total	121,837	100.00
Taipei City	20,783	17.06
Kaohsiung City	9,339	7.66
Taiwan Province	91,715	75.28
Taipei	10,003	8.21
I-Lan	3,582	2.94
Taoyuan	1,748	1.43
Hsinchu	830	0.68
Miaoli	515	0.42
Taichung	617	0.51
Changhua	852	0.70
Nantou	486	0.40
Yunlin	399	0.33
Chia-Yi	2,780	2.28
Tainan	10,772	8.84
Kaohsiung	2,665	2.19
Pingtung	3,844	3.16
Taitung	2,498	2.05
Hualien	4,175	3.42

Table 4-3 (Continued)

County / City	Squatter houses	%
Penghu	9,905	8.13
Keelung City	14,522	11.92
Taichung City	8,954	7.35
Tainan City	12,568	10.32

Source: Construction Bureau of local government, Taiwan R.O.C.

Table 4-4

Statistics of Military Official's Abodes

County / City	Number of Military Official's Abodes	%
Total	95,489	100.00
Taipei City	14,424	15.11
Kaohsiung City	11,661	12.21
Taiwan Province	69,404	72.68
Taipei	8,649	9.06
I-Lan	1,157	1.21
Taoyuan	11,429	11.97
Hsinchu	5,056	5.29
Miaoli	548	0.57
Taichung	2,090	2.19
Changhua	533	0.56
Nantou	178	0.19
Yunlin	352	0.37
Chia-Yi	3,546	3.71
Tainan	2,723	2.85
Kaohsiung	9,467	9.91
Pingtung	5,005	5.24
Taitung	416	0.44
Hualien	807	0.85

Table 4-4 (Continued)

County / City	Number of Military Official's Abodes	%
Penghu	901	0.94
Keelung City	1,338	1.40
Taichung City	8,018	8.40
Tainan City	7,191	7.53

Source: Ministry of National Defense, Taiwan R.O.C.

Table 4-5

Estimates of Public Housing Demands for 1979

County / City	Number of Families with Spouse or Relative living together in urbanized area	Range of Low Income Family	Percentage of Families without their Own Houses	Number of Families Qualified to Purchase Public Housing	Squatter Houses	Public Housing Demand
Total	2,345,200			413,423	121,837	535,260
Taipei City	439,500	40% - 5%	70.74	108,815	20,783	129,598
Kaohsiung City	223,900	50% - 5%	62.85	63,325	9,339	72,664
Taiwan Province	1,681,800			241,283	91,715	332,998
Taipei	377,700	40% - 5%	48.02	63,480	10,003	73,483
I-Lan	50,000	50% - 10%	17.90	3,580	3,582	7,162
Taoyuan	136,900	60% - 10%	30.87	21,130	1,748	22,878
Hsinchu	73,500	50% - 10%	36.96	10,866	830	11,696
Miaoli	45,300	50% - 10%	21.02	3,810	515	4,325
Taichung	108,300	60% - 10%	31.28	16,938	617	17,555
Changhua	93,300	60% - 10%	11.40	5,318	852	6,170
Nantou	44,800	50% - 10%	26.42	4,734	486	5,220

Table 4-5 (Continued)

County / City	Number of Families with Spouse or Relative living together in urbanized area	Range of Low Income Family	Percentage of Families without their Own Houses	Number of Families Qualified to Purchase Public Housing	Squatter Houses	Public Housing Demand
Yunlin	48,400	60% - 10%	9.54	2,306	399	2,707
Chia-Yi	84,400	60% - 10%	25.24	10,651	2,780	13,431
Tainan	82,900	60% - 10%	24.97	10,350	10,772	21,122
Kaohsiung	114,900	60% - 10%	30.09	17,286	2,665	19,951
Pingtung	83,900	60% - 10%	27.06	11,351	3,844	15,195
Taitung	24,800	60% - 10%	28.84	3,576	2,498	6,074
Hualien	37,200	60% - 10%	26.89	5,001	4,175	9,176
Penghu	9,200	60% - 10%	15.07	693	9,905	10,598
Keelung City	63,200	40% - 5%	62.69	13,867	14,522	28,389
Taichung City	103,100	40% - 5%	40.02	14,441	8,954	23,395
Tainan City	100,000	40% - 5%	62.58	21,903	12,568	34,471

Source: Family Income Survey of Taiwan, 1978

resources for investment, costs of housing, national income, and individual family situations. And since actual housing demand is usually much lower than the need for housing, it is always difficult to give satisfactory relief to the housing problem. Hence, in formulating a national housing policy, the government should first make an estimate of the total housing need, and then, based on the projected growth of the economy and its ability for public and private investment in housing, the government can figure out the total demand for housing or the number of housing units likely to be built over time.

2. The Housing Need and Housing Demand in the Taiwan Area in the Next 20 Years are Estimated below

a). The number of housing units needed to meet the current standard of minimum living space.

According to housing censuses conducted in the past, per-capita living space in the Taiwan area was 7.14 square meters in 1966 (not including kitchen and toilet), 8.2 square meters in 1970 (not including kitchen and toilet), and 12.26 square meters in 1975 (including kitchen and toilet). Although sound improvement has been made over the years, it is still far below the level of developed countries. If the figure is raised to 14 square meters per occupant, an additional 370,000 housing units would have to be supplied in 1975 (the year of the latest housing census data) as calculated below:

$$\frac{16,190,803 \text{ (1975 population)} \times (14\text{m}^2 - 12.3\text{m}^2)}{14\text{m}^2 \times 5.29 \text{ (average number of occupants per unit)}} = 370,000 \text{ housing units}$$

b). The number of housing units needed to cope with the population growth and higher standards: It is assumed on

the basis of projections made in the Comprehensive Development Plan of the Taiwan area that Taiwan's population will be 18,061,000 in 1981, 19,543,000 in 1986, 21,000,000 in 1991, and 22,356,000 in 1996. It is further assumed that living conditions will be improved as shown in Table 4-6. The number of housing units needed for the coming years is computed in Table 4-7.

Table 4-6
Future Living Conditions

Period	No. of Occupants Per Unit	Per Capita Living Space
1976-1981	5.	15 sq. meters
1982-1986	4.8	16 sq. meters
1987-1991	4.65	17 sq. meters
1992-1996	4.5	18 sq. meters

Source: Z. N. Lee, An Evaluation of the Public Housing policy of the Republic of China, p. 66.

Remarks: The figures for 1975 are taken from the Housing Census.

Table 4-7

Additional Housing Units Needed 1976-1996

Period	No. of Occupants Per Unit (1)	Floor space Per Unit Sq. M. (2)	Total Pop- ulation (3)	Housing Units (4)= $\frac{3}{1}$	Additional Housing Units Needed (5)
1975	5.29		16,190,808	3,063,383	
1976-1981	5	5x15=75	18,061,000	3,612,000	550,000
1982-1986	4.8	4.8x16=76.8	19,543,000	4,070,000	458,000
1987-1991	4.65	4.65x17=79.1	21,000,000	4,526,000	450,000
1992-1996	4.5	4.5x18=81	22,356,000	4,970,000	450,000
1976-1996 Total					1,908,000

Source: Ibid, p. 66.

c). The number of housing units needed to replace dilapidated dwellings: It is assumed that the life of a dwelling unit is 70 years and that all units more than 70 years old would be demolished and rebuilt. It is also assumed that with 1996 as the target year for projection, all units constructed before 1926 would be rebuilt. Only the total number of units built before 1945 is known because of the lack of information.

Based on 1970 census data, there were about 800,000 housing units built before 1945. Assuming that 20,000 had been rebuilt annually between 1971 and 1975, there would be about 700,000 of these units left as of the end of 1975, among which about 200,000 units ($700,000 \times \frac{20}{70}$) need not be rebuilt in the 20 years from 1926 to 1945. This means that

500,000 units are in need of reconstruction by 1996.

d). The number of housing units needed to provide housing for squatters: In 1975, there were 154,000 dwelling units occupied by squatters. Assuming no further increase in this number and all existing units to be demolished by 1996, the number of housing units to be reconstructed will be 154,000 units.

e). The number of housing units needed to provide for a minimum rate of vacancy: In the housing market, a certain number of unoccupied units is necessary to provide for population movement and seasonal demand. The vacancy rate in developed countries in general ranges from two to five percent. A two percent rate in Taiwan means about 100,000 units (two percent of the 5,000,000 housing units in 1996). The foregoing five items add up to a total of 3,032,000 units in terms of housing needs for the next 20 years.

Housing demand for the next 20 years, however depends on such factors as gross domestic product, fixed capital formation, residential construction and costs of housing. For purposes of estimation, the 20 years are divided into four periods, each of five years. Total GDP and fixed capital formation for each period are taken from long-term economic forecasts and other relevant data. Residential construction for the first two periods is assumed to remain at the same level as before, at 11 percent of total fixed capital formation, the reason being that no more resources could be mobilized while the ten major projects are still underway. For the latter two periods, however, the per-

centage is assumed to be lifted to 11.7 and 13.23 respectively in line with the government's intention to improve housing. Table 4-8 below shows the effective demand for housing at 2,639,000 units for the next 20 years.

Table 4-8
Estimate of Housing Demand

Item	Unit	1976- 1981	1982- 1986	1987- 1991	1992- 1996	Total
Gross Domestic Product	NT\$ 1 bil	4,249.4	5,424.1	8,314.5	13,127.3	31,115.3
Fixed Capital Formation	NT\$ 1 bil	1,338.6	1,676.7	2,229.8	3,281.9	8,527.0
Fixed Capital Formation/GDP	%	31.5	30.9	26.8	25	27.4
Housing Capital Formation	NT\$ 1 bil	147.4	184.5	262.4	434.2	1,028.5
Housing Capital Formation/FCF	%	11	11	11.77	13.23	12.06
Housing Capital Formation/GDP	%	3.47	3.40	3.16	3.31	3.31
Housing Demand*	Unit	491,000	527,000	656,000	965,000	2,639,000

* It is assumed that each unit costs NT\$ 300,000 in the first period, NT\$ 350,000 in the second, NT\$ 400,000 in the third, and NT\$ 450,000 in the fourth, excluding land.

Source: Ibid, p. 68.

A comparison between the above estimated need and demand for housing for the next 20 years will show that the latter runs up to only about 87 percent of the former. In other words, the potential investment in housing by the government

and private investors cannot satisfy the need for improvement in housing conditions. Moreover, of the total housing need, at least 60 percent comes from low-income families in need of government assistance. According to the experience of other countries, however, housing units constructed by the government usually account for only 20 to 30 percent of the total because of budget limitations. This is a fact that must not be overlooked in the formulation of future housing programs. (1:64-68)

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Chapter 5

A PROTOTYPE OF SUCCESSFUL PUBLIC HOUSING PROGRAMS THE SINGAPORE PUBLIC HOUSING PROGRAM

A. THE NEED FOR LEARNING FROM SINGAPORE

Taiwan's public housing programs were started in 1955. In the past 22 years (1955-1977) only a total of 135,213 public housing units were built, or about 6,146 per year, but the population has increased 10,000,000 during the same time.

Like Taiwan, Singapore is one of the developing countries. Seventy-five percent of its population is Chinese, and it has a high population density. This country is much smaller than Taiwan, however, it has built 240,000 public housing units, within 14 years (1961-1975). About 55% of the total population is now living in public housing. Their public housing programs are to be considered as a good prototype for South-east Asia because they have been most successful in housing low income families. Taiwan's government is now doing their best to improve public housing programs and hopes to build more public housing, therefore, Singapore's experiences can be helpful in developing recommendations for Taiwan's public housing policy.

B. GENERAL INFORMATION AND PUBLIC HOUSING DECISION-MAKING MACHINERY OF SINGAPORE

Singapore is located on a small island south of the Malaysian peninsula, controlling the Strait of Malacca, a bridge connecting the major sea routes to Europe in one direction and Asia in another. The island is 26 miles long and 16 miles wide. The total area is 587.6 sq. kilometers (226.9 sq. m.), about twice the area of Taipei City. After



Figure 5-1

World War II, Southeast Asia rebounded quickly, especially its economic development. Singapore is a free port -- a terminal among Europe, Asia, and Australia, therefore, it enjoyed a rapid economic growth and its population increased rapidly as well. Now the population is 2,300,000 with a population density of 3,918 persons per square kilometer. (1:13)

Housing problems are therefore very serious. On February 1, 1960, the Housing and Developing Board (H.D.B.) was formed for the purpose of implementing the public housing policy of the new government of Mr. Lee, Kuan Yew, the present Prime Minister. The H.D.B. was constituted under the Housing and Development Ordinance No. 11 of 1959. It marked a definite stage in the history of housing in The Republic. The policy was to provide homes for the people at rents they could afford as a public duty, not a commercial proposition. (2:470)

H.D.B. is a committee system, under the ministry of national development. It has 5 committees assigned by the minister. H.D.B. has been divided into several divisions, in charge of construction, urban redevelopment, land development, new town construction planning, razing squatter houses, managing and maintaining housing, etc. By March 31, 1976, the total staff members numbered 9,460.

In order to implement the public housing policy, Singapore's government sent specialists to study in West Germany from 1961 to 1975. The country has implemented three five-year plans and has constructed 240,000 public housing units. Singapore is now carrying out the fourth five-year plan. It is expected that 70% of the population will be accommodated in public housing units. (1:13)

C. METHODS OF PUBLIC HOUSING DEVELOPMENTS

1. Development New Towns:

In suburban areas, the government selected proper locations to develop new towns in which public housing is the essential

part. This reduces city population pressure, and it constitutes the main content of four five-year plans. Following are some particulars:

- a). Queens Town: The first five-year plan (1961-1965) was based on the development of Queens Town. This plan was launched with a production target of 51,000 units by 1965. The target was exceeded by 10%. Queens Town has only an area of 700 acres, but it contains 27,000 public housing units to house 150,000 people. Logically, this plan also included shops, restaurants, libraries, swimming pools, etc.
- b). Toa Payoh: The second five-year plan (1966-1970) was based on the development of Toa Payoh. Under this plan, 66,239 units were built. Toa Payoh has an area of 620 acres. There 36,000 units of public housing with various styles were built, housing 250,000 people. The public facilities are the same as in Queens Town.
- c). Telok Blangoh: The third five-year plan (1971-1975) concentrated on developing Telok Blangoh, Woodlands, and Bedok, which contain a total of 118,535 public housing units. Each new town can house 120,000 people.
- d). The fourth five-year plan (1976-1980) envisaged the building of 150,000 units.

2. Urban Renewal Plan:

The urban renewal plan was carried out in the downtown area, where a number of 19th century and dilapidated houses were located. The population density was 1,000 people per acre. The H.B.D. tore down the slums and built hotels, recreation centers, and public housing for middle income people. By 1976, there

were 70 areas which had been renewed and offered job opportunities for 50,000 people. This plan produced 5,300 public housing units and shops.

3. Raze Squatter Houses and Slums:

From 1960 to 1972, Singapore has torn down 52,000 squatter houses and 3,200 squatter families were reallocated into public housing which was built on state-owned land. The rest received compensation from the government and built their own house.

4. Helping the Low Income Families to Rent or Buy Public Housing Units

a). The previous public housing programs were helping low income families, therefore, the floor area was very small and most units were for rent. Since 1964 in order to help them buy housing, the government announced the down payment was 20% of the total cost with the rest payable within 20 years, at an interest rate of 6.5%. Additionally if the tenant lived there for more than 3 years, he could use the rent he paid in the past 3 years as a down payment to buy the house.

b). On the other hand, the government had fixed the rent after World War II. Many houses were rented at the low rent scale set up 30 years ago. The reason the government fixed the rent was to reduce the housing burden of tenants.

c). If the family monthly income is lower than S\$800, (U.S. \$ 1 = S\$2.40) then this family can rent 1 room or 2 room public housing. The rent for 1 room housing is S\$35.65 with tenant paying only S\$20.00. The rest, S\$15.65

is paid by the government. Rent for a 2 room house is S\$58.30 per month, with S\$40.00 paid by the tenant and S\$18.30 paid by the government as subsidy.

D. METHODS OF FUND RAISING

On July 1, 1955, Singapore promulgated "The Central Provident Fund Ordinance". Under this ordinance, every government employee was required to save a certain percent of his or her salary. At first the ratio was 5% of their salary. By 1973, this increased to 13%. The current ratio is 30%. If the salary is higher than S\$363 then the employer and employee will pay equally. If the salary is lower than S\$10, he or she will be excepted and not required to pay anything. If the salary is more than 10 and lower than 200 Singapore dollars, only the employer has to pay 15%. If the salary is higher than 200 dollars and lower than 363 dollars, then the employer will pay 15% of the salary, while the employee must pay one-third of the amount between the salary and S\$200. For example, if the salary is S\$230, then the employer pays $S\$230 \times \frac{15}{100} = S\34.50 . The employee pays $S\$(230-200) \times \frac{1}{3} = S\10.00 according to Singapore's law, the servant of a family still has to join the Central Provident Fund System, otherwise the employer will be fined.

The certain percent of their salary will be refunded when they retire as a kind of social security. In 1968, the government allowed its employees to use their money as down payments for public housing. From then on, a percentage of their monthly salary was deducted to pay for housing until the mortgage was clear. The house could not be used as collateral or sold to another person. As to the government's housing fund, it is obtained from the following resources:

1. The government's budget
2. Borrowing from the Central Provident Fund Board

3. Public housing rent, collected by the H.D.B.
4. Housing costs and interest payed monthly by
the buyers^(1:15-17)

E. METHODS OF LAND ACQUISITION FOR PUBLIC HOUSING CONSTRUCTION

1. Since the construction of public housing by H.D.B. in 1960, the state-owned land occupied 60% of the total national area. Therefore, the public housing was constructed on public land. However, it was not necessarily situated in areas most suitable for housing. To overcome this problem, land had to be acquired both expeditiously and cheaply.

The Land Acquisition Ordinance of 1920 was already in existence but its provision did not satisfy the demands of the 1960s. Amendments to the ordinance were hampered due to constitutional difficulties because Singapore was then a part of Malaysia. After the secession in 1965, the Land Acquisition Act of 1966 was passed. Under this act private land could be compulsorily purchased by the government. The government could either use this land to build public housing or sell it to private construction companies to build on it, but designs made by private companies were required to follow the government's design.

Although the Land Acquisition Act of 1966 provides for the payment of "market value", it also provides that "when the value of land has been increased by reason of development of the neighborhood by the provision of roads, drains, electricity, water, gas, or sewage, or social, educational or recreational facilities by any public or statutory authority at its expense within seven years" from the date of declaration of acquisition

"the amount of such increase shall not be taken into account". (2:476)

In short, the increase in land value will not go to the private sector. In the case of land whose owner has declared a value for an official purpose, such as payment of tax or duty on land within two years preceding its acquisition, the value so declared and accepted for official purposes is deemed to be the market value of the land for the purpose of payment of compensation.

2. Using Land Use Limitations To Control Land Speculation

Singapore has no limitation on private land ownership, but has a use limitation on changing title, meaning that before the title is changed, the buyer must submit a land use plan which contains the blueprints of buildings, period of construction, usage, etc. The plan must then be checked by the government. If the government considers that the land needs to be developed, and if the development follows the government's plan, then its purchase will be approved, but if the buyer fails to finish the development within the construction period, or changes the usage or styles, then the land will be compulsorily purchased by the government according to the declared value. In this way, the government can control land speculation. The government can sell this land at market price, therefore earning a profit.

3. The public housing owner can own the house only -- the land still belongs to the government. Thus the game of land speculation is under control. Consequently housing costs can be controlled and even reduced from unjustified levels. (1:14-22)

F. REVIEW AND COMPARATIVE ANALYSIS OF PUBLIC HOUSING PROGRAMS IN SINGAPORE AND TAIWAN

After studying the public housing programs in Singapore, it was

found that the following reasons contributed to their success:

1. The government's recognition and determination:

It was believed that the Singapore government recognized the seriousness of housing problems, and also recognized that mass housing construction would not cause inflation. On the contrary, it would promote related business and create numerous job opportunities. The public housing construction is a producing business, not a consuming business. Based on this premise the government made its decision to build mass public housing. The fact that the government was right was proven. Compared to Taiwan's government, it seemed that the government considers public housing programs as a kind of social security, used to "help" low income families. It was a burden to the government, therefore, as mentioned before, the national budget was very low.

2. No Problems with Land Acquisition:

The Land Acquisition Ordinance allows the government to compulsorily purchase private land for public housing use. Additionally, 60% of the land in Singapore belongs to the government. On the other hand, Taiwan's government does not have a law allowing it to compulsorily purchase private land for public housing use, and only one-third of its area is owned by the public.

3. Singapore's government can purchase private land at a declared price and sell at market price. Therefore, increases in land value will go to the government. In Taiwan, the exchange of land title does not go through the government, therefore, most of the increase in land value will go to the private sector.

4. The Singapore government has "the Central Provident Fund Ordinance" which requires government employees to save their money in order to buy public housing. In Taiwan the government doesn't have anything like that.

5. In Singapore, the land for public housing belongs to the government -- the low income families do not have to buy the land. Therefore, the public housing price is cheap and affordable to every family.

6. In Singapore, there are only a few earthquakes, therefore, building construction doesn't consider earthquake factors. Because steel can be used less, construction costs are cheaper.

7. In Singapore the public housing units are all very tall: from 10 stories to 24 stories. In order to make it comfortable, elevators are very important. Because only the best quality elevators are used, it is no different living on the 24th story than the first story.

G. CONCLUSION

The review of Taiwan's public housing program shows that due to the government's concept, policy, and other limitations, the country is unable to build mass public housing. The example of Singapore shows how a successful housing program is implemented in a country similar to Taiwan. The next chapter, therefore, will adapt the solutions applied in Singapore to Taiwan. Then, recommendations will be developed for improving the public housing program in Taiwan.

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Chapter 6

RECOMMENDATIONS

After reviewing all the public housing programs in Taiwan and comparing with the programs in Singapore, the following recommendations are suggested to improve Taiwan's programs:

A. ACCURATELY RECOGNIZE THE PUBLIC HOUSING PROBLEM AND ITS POSITIVE MEANING

Public housing construction serves a dual role in aiding social welfare. Not only does it improve living environments, but it also increases the status of construction related industries, creating more job opportunities and thus promoting the nation's total economy. Public housing construction also undercuts the housing price and increases land value as an additional effect. Therefore, after World War II, public housing construction became a major priority of many countries around the world. The government of Taiwan should recognize its impact and make the decision to build mass public housing.

B. ACQUISITION OF LAND

Since land must be acquired for public housing projects, more government effort is definitely needed before the housing situation can be improved, there are some general recommendations for consideration:

1. Adopt Singapore's method of compulsory purchase of private land in the public housing act.

2. In planning for new towns, some residential area should be reserved for public housing projects.
3. High priorities should be given to the reservation of land for public housing in urban renewal projects.
4. When a government institution is relocated, the vacated lot should be considered for public housing.
5. Political division of land, or administration boundaries, should be disregarded in the development of housing.
6. Unless the public lands are reserved for public facility use, they should submit for public housing projects.
7. In order to use public land, the managing organizations must conduct a survey of these lands piece by piece.

C. FUND RAISING

The fund raising problem is a very important factor in public housing construction. The current fund raising method is not a good practice, as mentioned before, therefore, it is imperative that funds needed for housing loans be raised from sources that are more reliable, such as the following:

1. Specific annual appropriations from the budgets of central and local governments to provide a regular source of money for housing loans.
2. Tactful use of part of the surplus from government budgets.
3. Long term, low interest loans from abroad. This is perhaps the most suitable source, since the credit worthiness of the country is good. Initiative certainly should be taken toward the international borrowing approach.
4. Setting up a central reserve fund system and using the

deposits for housing loans.

5. Encouraging banking institutions to build up long term savings deposits for housing and offer housing loans.

D. GOVERNMENT MACHINERY

As Taiwan is small in area and has good transportation facilities, there need be only one agency for housing at the central government level. The restriction on local governments to locate their housing projects within their respective administrative boundaries should be removed. Basically, in the implementation of housing programs, two groups of functions are involved, administrative and operational. The former has to do with the formulation of housing policy, development of housing programs, raising of funds, and drawing up of pertinent regulations; and the latter with the acquisition of land, project planning, design and construction of dwellings, their leasing and sale, and communal management. Based on the foregoing analysis, two alternatives on organization may be considered: Proposal A: Establish a Public Housing Bureau, under the Executive Yuan or under the Ministry of the Interior to perform the administrative functions. In addition, set up a housing corporation with government funds to engage in construction and management operations. Private investors, particularly from the building material and construction industries, may be invited to participate, but the corporation should remain essentially as a public enterprise. Proposal B: Give the Public Housing Bureau both administrative and operational responsibilities, thus increasing communication, and thus,

efficiency.

E. PUBLIC HOUSING POLICY

1. The government should announce the standards defining low and middle income families, as soon as possible.

2. In order to reduce the housing costs, the public housing should sell the construction only - the land should belong to the government.

3. The government must have middle and long range projects. This report has discussed the public housing demands forecasting methods for local government referral.

4. The success of land reform in Taiwan was due to the philosophy that land belongs to all the people and that everybody has an equal right to use the land. Therefore, anyone who owns too much land should have the amount of land they own reduced or purchased by the government after which, the land should be sold to the tenant. This is the basic concept of the-land-to-tiller policy. If the government considers that everybody has an equal right to live, then the government should consider establishing a housing number limitation - every family can have one house only. The extra houses should be sold or pay a high rate of tax, or be purchased by the government. By using this method every family may have their own house.

F. ENFORCING THE PUBLIC FACILITIES AND SERVICES

In public housing projects, more consideration should be given to public facilities and service. There is a need for more parking facilities (for bikes and motorcycles), hospitals, children's playgrounds, markets, etc.

G. MANAGEMENT AND MAINTENANCE

The public housing authorities have established good regulations for management and maintenance of public housing, but the problem is how to carry out these regulations effectively. This is very important, otherwise, the essential meaning of the entire public housing programs will vanish.

It is a very important concept that public housing is not only providing a "house" but also provides an "environment" where people can live comfortable, healthful and safe lives. This is also one of the purposes of the elaboration of this report.

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IMPLICATIONS FOR A HOUSING POLICY IN TAIWAN
BASED ON THE SINGAPORE EXPERIENCE

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AN ABSTRACT OF A MASTER'S REPORT

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Department of Regional and Community Planning

Kansas State University
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The purpose of this study is to make recommendations for improving the public housing programs in Taiwan.

The report begins by discussing the factors affecting the housing problem and by introducing current public housing programs, analyzing their problems, and then introducing Singapore's public housing program as a potentially successful prototype program. The reasons for this success are then analyzed and, by adapting Singapore's solutions to conditions in Taiwan, recommendations which should be considered for implementation in Taiwan are identified.

The report discusses land acquisition methods, fund raising, and government machinery as well as management and maintenance of public housing in Taiwan, etc. It is a comprehensive study.